

CAPTAIN RENÉ FONCK
French Ace

Edward Oldham

Frontispiece

FIGHTING PLANES AND ACES

By W. E. JOHNS



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CHAPTER I

IN THE BEGINNING

Lectures expressing the view that aircraft were of no military value were common before the War, and even experts were divided in their opinions. Obvious though it appears in the light of subsequent events, few foresaw the amazing development of the Air Arm, or the neck-to-neck race for aerial supremacy which was to start in 1914 and last until the end of the War.

Just how much the German High Command hoped for from the Imperial Air Corps we can only conjecture. We know that they reckoned only on French opposition, and the entry of Great Britain into the war, admittedly with only four squadrons, caused the cogs of the finely adjusted German military wheels to slip. There is little doubt but that she thought she was strong enough in the air to keep her army commanders informed of every move of the opposing armies.

We can only wonder that she did not succeed, but she failed because she had not the numerical superiority for such a plan. Both sides, before Christmas of 1914, had realized the value of aircraft and went to work to produce sufficient machines to drive the others from the skies. The Vickers Gun Bus, with a machine gun mounted in the nacelle, arrived on the scene, and the German factories had to call a halt to produce an effective reply. They replied with the Fokker, and its production turned the tide in German favour. Thus the race began.

During the War aircraft secrets were soon common property, and designers lost no time in adopting any improvements

of the other side. The Allies generally held the lead in the air, although, had the War lasted another month or two, the Fokker D.VIII might have handed the reins to Germany, at least for a time. As a whole the British pilots were probably more daring than any others, but, generally speaking, the side which had the best machines held the advantage.

THE ACE SYSTEM

It has been said that there will be no "aces" in the next war, and several reasons have been put forward in support of this assertion. Broadly speaking, it is claimed that to-day's conditions are so very different from those which prevailed in 1917 and 1918 that the individual will be given little chance of distinguishing himself.

Napoleon formulated the doctrine that the general who wins is the one who arrives first on the scene of battle with most men; that theory has now been translated into air action, and aviation has become a mighty bludgeon in the hands of a commanding officer. To-morrow, squadrons will fly and fight together, each pilot under the wireless control of the leader, who in turn will receive his instructions via ether from Headquarters. Each machine will fly in a position where the guns of other planes can help its defence, and that formation will be hard to break.

Progress tends towards mass attack and mass defence, and to-morrow's dog-fight may see a thousand machines in the sky. The question as to whether a free-lance pilot could exist in such conditions remains to be seen.

The "ace" system was started by the French quite early in the War as a means of stimulating individual effort, when individual effort was all important. Later, other nations copied it, expanded, and publicized it, in order to stir an inferior flying personnel to greater efforts.

Great Britain, on the other hand, did not officially count the victories of its airmen. The Air Council was opposed to the scheme, and rightly so. War was an impersonal business, and to point to certain airmen as successful warriors was an unfair gesture to the unquestionable valour of the infantry, the artillery, and other ground troops. So the British aces were never honoured and fêted as were the French and Americans. Official recognition of aces might even have caused heart-burning in the Flying Corps, for only scout pilots were in a position to claim the coveted distinction. The pilot of the bombing or reconnaissance plane would have been automatically eliminated, and it might have been injurious to the morale of such squadrons. All did their duty, all were necessary, why make distinctions? As a matter of interest, records show that casualties were much higher in bomber squadrons than in fighter squadrons.

Then there was the observer. What chance had he of becoming an ace? He was the bravest of the brave, yet he was often overlooked by everybody. In the public mind it was always the man at the stick who was the hero when there was any heroing to be done—not the fellow facing the perishing blast of the slipstream of the propeller, or the enemies' fire, from the rear cockpit. The designation of "ace," while romantic, was therefore fundamentally unsound, because it extended a false importance to one branch of the Service at the expense of others. The result of it was made apparent by the dejected attitude of the French bomber pilots towards the end of 1918. By nature temperamental, they not unnaturally sought the publicity which surrounded the ace pilots; they applied for transfer to scout squadrons and lost heart when the concession was refused. No doubt there were many whose morale was injured by this unfair and unmilitary discrimination.

So no official record of "aces" was kept by the Air Ministry, and even to-day it is extremely difficult to obtain information

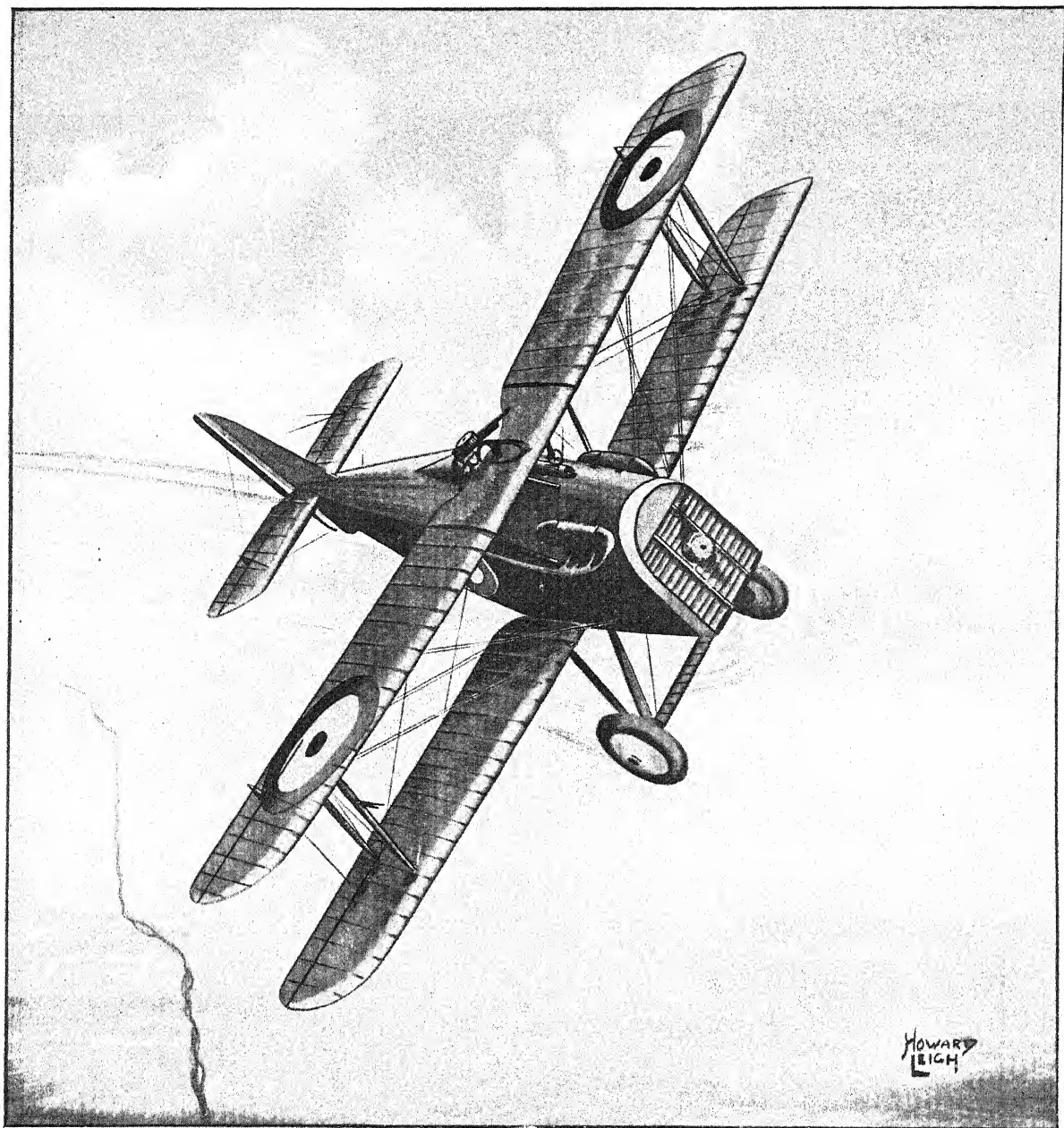
for publication regarding special individuals; the recognized high morale of the Service testifies to the soundness of this policy. In the French Flying Corps, five victories constituted an ace, and this qualification was later adopted by the Americans. In the German Imperial Air Service ten victories were necessary. To-day the title is sadly misused.

CONFIRMATION

In attempting to arrive at the number of victories obtained by the aces, we are confronted by many difficulties at the onset, and the number must always be considered approximate—even those officially confirmed. Not even the pilots themselves always knew the truth. No one would question their integrity for a moment, but mistakes were possible. We may take it that the aces all obtained more victories than the number for which they were credited, for there is not the slightest doubt that many victories were never confirmed; on the other hand, many confirmed victories were not decisive victories, or, if they were, they were sometimes unconsciously duplicated.

Confirmation of a victory was usually obtained from one of two sources, either from other pilots or balloon observers who witnessed the combat, or from artillery observation officers in the front line. Occasionally victories were confirmed by the enemy. Obviously, if a pilot was shot down in a plane several miles inside enemy territory, the chances were that no one would see the combat and confirmation would be impossible. The simple word of the victor was not sufficient, for such a practice might lead to abuse.

Strictly speaking, the enemy plane had to be seen to crash or fall in flames, but this was not rigidly adhered to. It must be remembered that a pilot finding himself getting the worst of an encounter would often throw his machine out of control



THE SE 5A SCOUT 1918. 240 H.P. HISPANO-SUIZA ENGINE

Facing page 12

and spin towards the earth in the hope of misleading his opponent. If the winning pilot had to take on a second opponent, as often happened, it was unlikely that he would see his late enemy recover control near the ground and streak for home just over the tree-tops. The victor, seeing the machine fall, would in all honesty put in his claim, and this might have been confirmed by officers in the line who saw the machine fall, apparently to the ground, but were not in a position to see it recover and escape.

For this reason both sides claimed a greater number of victories than had actually been obtained, and at the close of hostilities the number of confirmations exceeded the number of losses admitted. Compared, the British and French figures show about three victories to each loss. The German official records show precisely the same superiority. Both sides claimed three times as many victories as had actually been won !

If the records are to be believed, the German aces won more victories than those of any other nation ; 3,392 victories are credited to 147 aces, that is, to pilots with more than ten victories. In considering these figures it must not be forgotten that most of the fighting took place over the German side of the line. The British stand next on the list ; 94 pilots are named as having destroyed " many " enemy planes, and 190 are named as having destroyed " several." There was a distinction between " many " and " several," but in each case the number would certainly exceed five. These 284 aces between them shot down 2,847 enemy planes. The French records reveal 155 aces with a total bag of 1,596 victories. America, in seven months, claimed 537 victories.

It was easy to duplicate innocently a victory. An artillery observer, seeing a machine fall in flames at a certain place and time, would readily sign a confirmation report for the officer seeking it. A few days later another officer would come along seeking confirmation of a different combat. The artillery

officer, in all good faith, might admit seeing a machine fall, but after a period of several days had elapsed was not quite sure of the place and time. That would be near enough for the officer seeking confirmation, who was naturally anxious to see his squadron's score as high as possible. Another statement would be signed, and thus two victories would be claimed for the one which had actually occurred. In point of fact, the falling machine might have even been one of his own side! Ground officers seldom knew the difference between types, nor were they close enough to see the identification markings—not that there was much to see by the time a burning machine was near the ground. Considering these things, it will be readily understood that mistakes were easy to make and must have been common.

THE ACES

The "ace" of air warfare began to appear early in 1916. Before that time there were a few airmen who had distinguished themselves by shooting down one or two enemy planes, but there were none with scores such as we understood them later on. But names soon began to emerge from the mists of mystery surrounding air warfare, and scores mounted rapidly, not because air warfare was easier, but because there was more air activity and the art of air fighting became developed.

The name of Immelmann was first whispered in the summer of 1915, and he will go down to posterity for having invented the stunt which still bears his name. He was killed by Lieut. G. R. McCubbin, flying an F.E., when his score stood at 16. By June, 1916, Oswald Boelcke, one of his pupils, had equalled this score, and the names of Nungesser and Guynemer were heard. Guynemer fell in September, 1917, with a score of 53. Ball now arrived on the scene and swept like a meteor across the blue sky of France, leaving a trail of blazing machines

in his wake. He fell in May, 1917, with a score of 43. New Knights were already in the field; Bishop (72),¹ Trollope (who created a record by shooting down six planes in one day) (18), McCudden (58), Fullard (53), Collishaw (68), McLaren (54), and Barker (53), were fighting daily duels. Then Mannock, the British ace of aces, swept down and destroyed 73 enemy planes during his brief but brilliant career.

The French were also doing well; Fonck (75), Guynemer (53), Nungesser (45), Madon (41), and Boyeau (53), were at the top of the French list. Baracca (Italy) was well on the way to his final score of 34, and Coppens (Belgium), reached the same figure. The American ace, Rickenbacker, had not yet arrived, but Lufbury (17), was just beginning to score.

On the other side von Richthofen was on the way to his final score of 80, Udet, who survived four years of air warfare and ended with a score of 62, was well known. Lowenhardt (56), Voss (48), Rumey (45), and Richthofen-the-Younger (40), were carrying on the Boelcke tradition.

WHEN KNIGHTS WERE BOLD

Let us glance back at the conditions as they prevailed in the great days of those knights of the air, the fighting aces, days that are gone for ever.

As the first glimmer of dawn lightens the eastern sky a party of sleepy-eyed mechanics drag back the doors of a hangar and wheel out a drab-coloured Camel or S.E.5. The lone eagle of the skies, the knight of 1918, steps out of the squadron office and examines his battlefield, the sky, closely. He is fearless, a distinguished fighter, and devoted to the service of his country.

Six hundred years ago he would have been clad in gleaming

¹The numbers against the names are the totals obtained by the airmen at the time of their death, or by the end of the War.

armour as a protection against the enemy's weapons ; to-day he wears a Sidcot suit as a protection against the bitter cold of extreme altitudes. He still wears a helmet, but of leather ; goggles, which he can raise or lower at will, replace the visor. Gauntlets of fur, instead of steel, reach nearly to his elbows. He carries no shield, but perhaps a flash of colour on the nose or fuselage of his machine reveals a grim or humorous device in lieu of the coat-armour of his prototype. He carries no lance, but the twin machine guns mounted just above the engine cowling are far more deadly.

He climbs into the cockpit ; his squire—or chief mechanic—takes his place at the propeller.

“ Switch off, sir.”

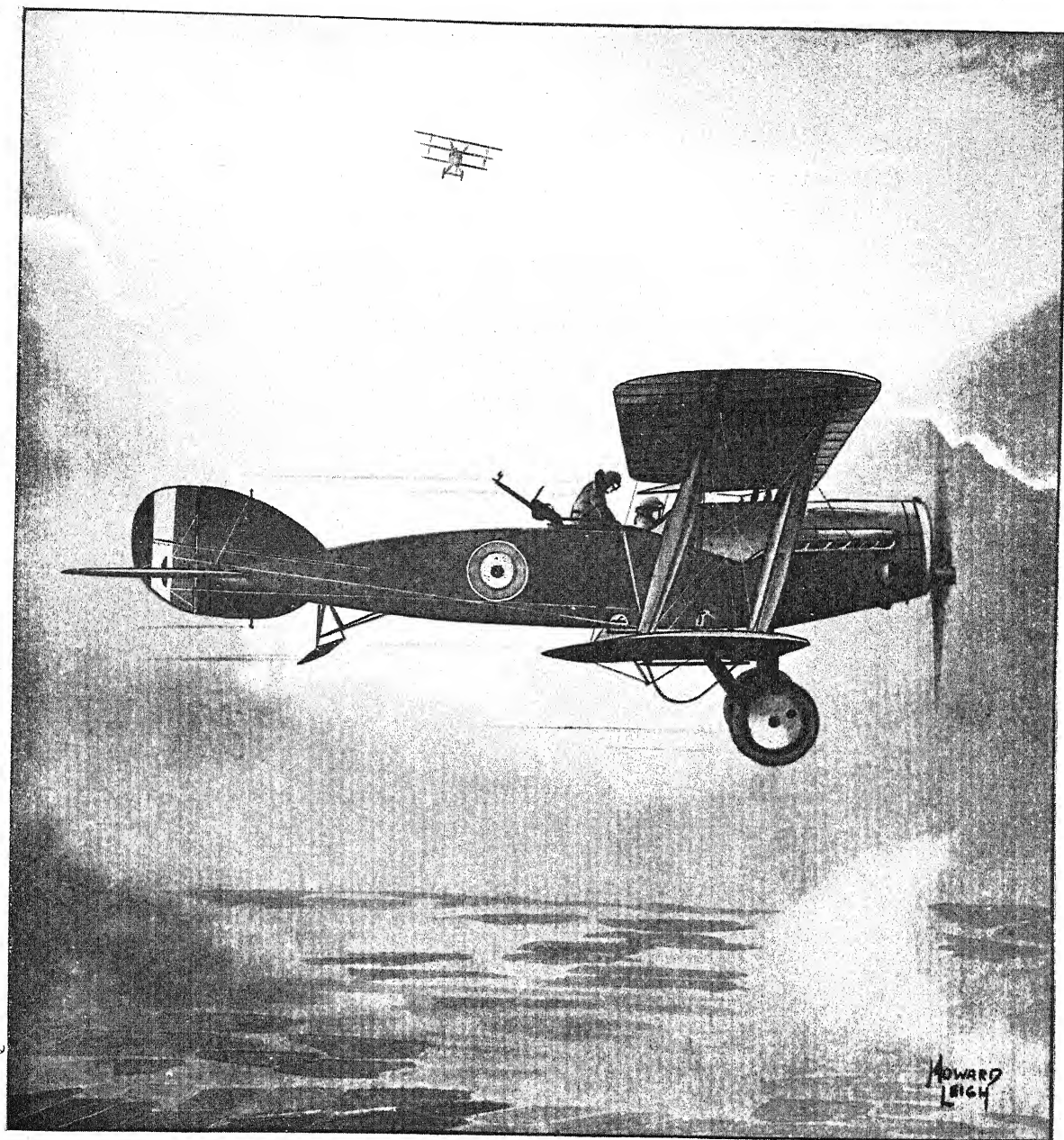
“ Switches off.”

“ Contact, sir.”

“ Contact.”

The engine roars ; the chocks are pulled away ; the tail of the machine lifts as it meets the wind and it races across the green turf like a bullet. Up now, and climbing swiftly, the knight thunders away towards the field of battle. Sometimes he returned ; more often, sooner or later, he did not. Far away in the blue dome of Heaven he finds the enemy champion waiting, and heads towards him. For a moment they jockey for position, each striving to place his adversary with his face to the sun, or to obtain the higher position, for altitude has many advantages. From it they can use the additional height to accumulate speed when a sudden dive is indicated. These are the tactics of air fighting. Diving, darting, banking, circling and zooming, the battle rages until one or the other, still fighting, falls, and falling, dies.

This is a brief picture of the “ ace,” the champion of the air. Like a knight of old he ventured forth into the unknown, his banner unfurled, to cry his country's challenge, to meet his antagonist in single combat, staking his life upon the issue.



THE BRISTOL FIGHTER. 250 H.P. ROLLS-ROYCE FALCON III ENGINE

As time rolls on his methods may appear crude, and the details of his combats fade into the mists of obscurity, but his achievements will never die.

In thinking of him let us not forget the others, the men who were never aces, the men to whom fate dealt but one card, and smiled as they played that one card gloriously.

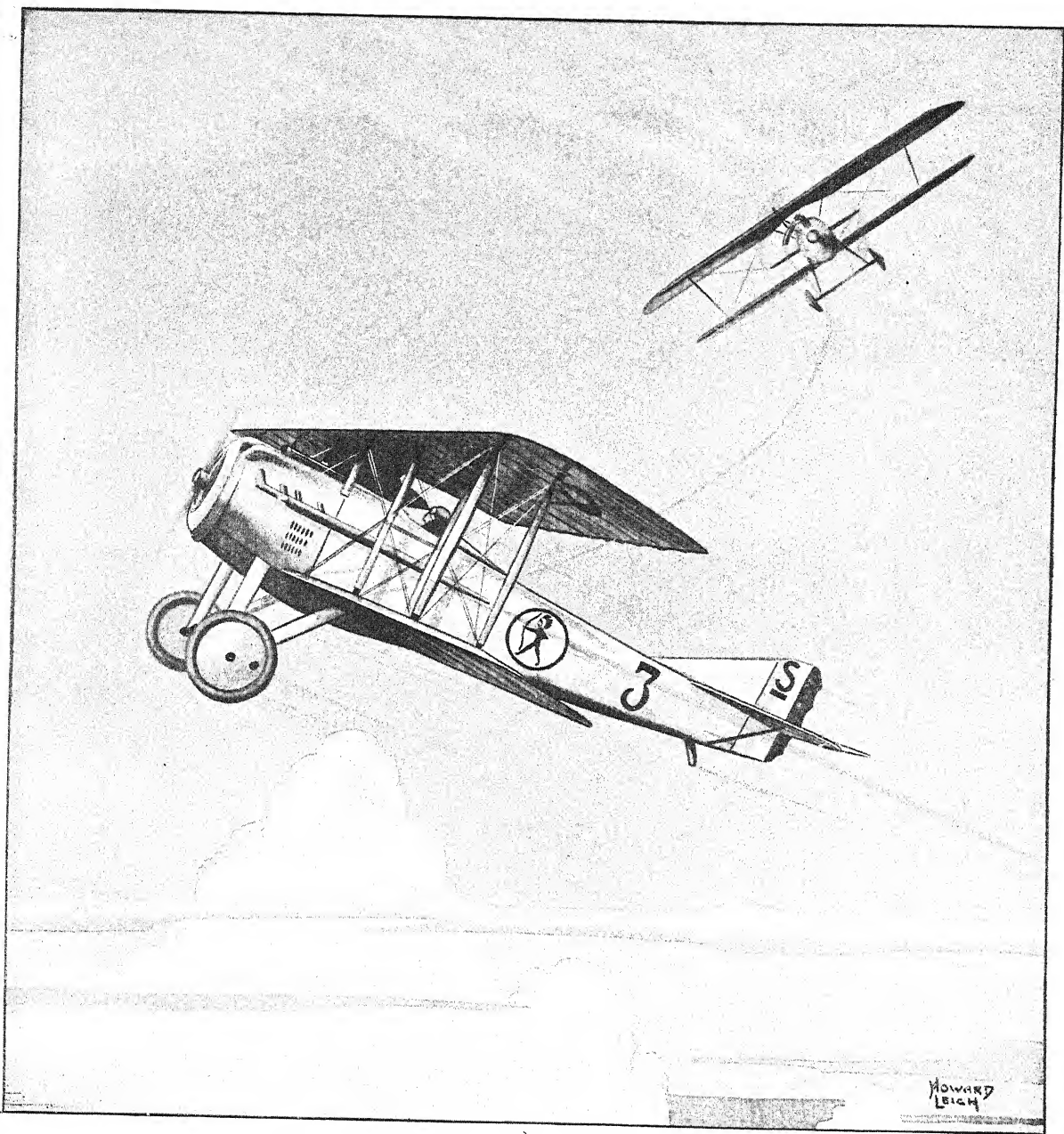
CHAPTER II

EARLY DAYS AND PROGRESS

It is difficult to arrive at the exact number of military aeroplanes possessed by Great Britain in 1914 for almost every record gives a different figure, but the number was probably about 250, roughly 200 aeroplanes and 50 seaplanes. In addition to the seaplanes the R.N.A.S. had 4 lighter-than-air craft. By October, 1919, this figure had increased to over 22,000.

The R.F.C. had four squadrons ready for war and the historic flight of the first 37 machines to France on August 14th, is well known. A fifth squadron was soon ready. Types with which the R.F.C. was equipped in these early days were B.E.2's, Bleriot, Farmans, and a few Sopwith Tabloids. A rough estimate of the number of pilots in the R.F.C. and R.N.A.S. places the figure at about 200 with 1,600 other ranks. By the end of the War the number had grown to 28,000 officers and 270,000 other ranks.

France, which had been the real birthplace of aviation, entered the War with about 850 pilots and 750 machines of the Bleriot, Caudron, and Morane-Saulnier types. In Russia the Air Service was typical of everything Russian at the period. Huge sums had been spent on aviation, but few efficient aeroplanes reached the front, although official figures show that she possessed 800 aeroplanes, 1,000 pilots, and 20 airships. Italy had been building aeroplanes and excellent aero engines for many years; the Italians had also had some actual experience of air warfare, or rather the use of the aeroplane in war, in Tripoli. Serbia too had made use of aircraft in the



THE SPAD. 200 H.P. HISPANO-SUIZA ENGINE

Balkan war and possessed about 10 machines, although no mention is made of her using them except at the siege of Scutari. Belgium put a few machines in the air, probably about 40, although not more than half of these could be considered serviceable.

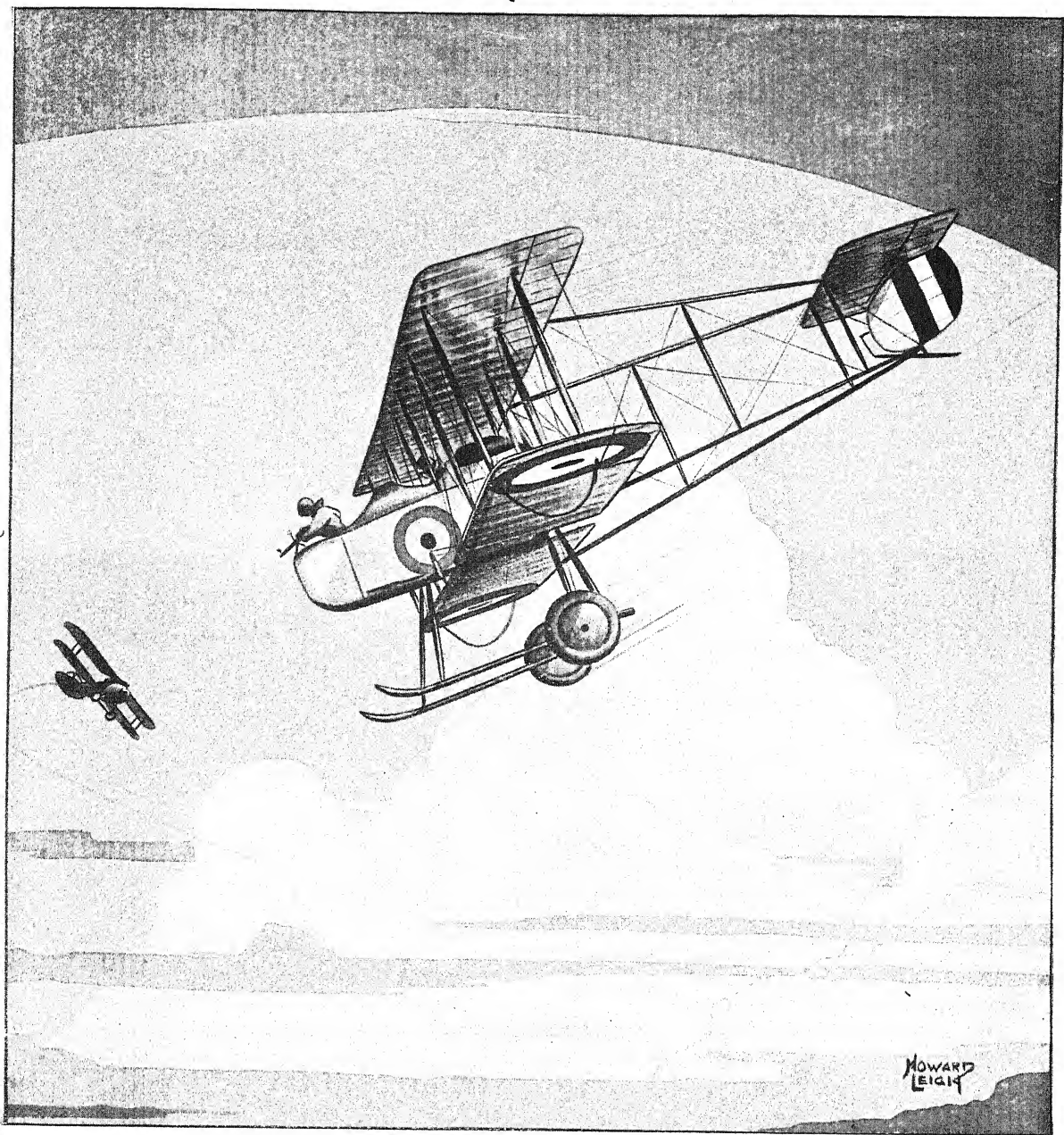
With regard to Germany, it had for many years been the policy of the German War Office to adopt and develop any invention which might be useful in warfare, and aviation had not been overlooked. Experiments with the Zeppelins had been going on since 1900 and on the outbreak of war, in addition to 30 airships, the enemy possessed about 850 serviceable aeroplanes. They were mostly of the Taube type, with the curved swept-back wings which gave them their name. On the whole, the German machines were better equipped than ours. They were fitted with a good set of instruments, and while these were by no means efficient, the German pilots were better off than ours who had few instruments or none at all. As early as 1914 German aeroplanes were fitted with wireless, and while these had a very limited range they were a valuable asset. Cameras were provided in nearly all their machines as well as dual controls which gave the observer a chance of reaching safety should his pilot be killed or wounded. They were also supplied with compasses, altimeters and bomb-dropping gear.

The duty of aircraft at this period was confined entirely to scouting—watching the movements of the enemy, spotting artillery, and photographing their positions. It is doubtful if anybody foresaw what a fine art air duelling was to become. The only real danger the pilot had to face, except the ever-present possibility of the machine falling to pieces in the air, was anti-aircraft gun fire. There was danger from small-arms on the ground when flying very low, but machines generally flew above this danger. Germany was far in advance of the Allies in anti-aircraft guns, for she had been experimenting with these weapons for many years whereas Great Britain had practically ignored them.

It has often been said that the first air combats took place between pilots armed with stones and brick-bats, the idea being apparently to drop these missiles on each other. It is quite certain, however, that before two months had elapsed pistols and carbines were being carried, and an air battle was reported to have taken place between a French and German pilot on August 14th, in which the Frenchman was armed with a pistol. This appears to be the first air combat worthy of the name. Shortly afterwards Captain Mapplebeck—who went to France with the original 37 machines—was wounded in the neck by a German pilot armed with a rifle. Once air fighting had commenced the adoption of the machine gun was inevitable, and the arrival of the Vickers Gun Bus, on the scene, a “pusher” type with a machine gun mounted in the nacelle, gave the Germans food for thought. Both sides were building aeroplanes with frantic speed, for training purposes as well as for the Front, for it was now realized that aerial supremacy would rest with the side which possessed the best equipment. The designers of each side copied the best points of each other’s machines and development proceeded apace. The fighting scout became specialized as a robust and manœuvrable single-seater. The French produced the Morane and Nieuport monoplanes. Germany replied with the Fokker, which was very similar to the Morane, but had a more powerful engine. The British then produced the de Havilland “pusher” scout, the Martinsyde and the Bristol Bullet, and the days of the early Fokkers were numbered.

There were soon improved Fokkers, Albatroses and other German scouts in the air, and the “1½ Strutter,” which, by the way, was a two-seater fighter, appeared on the British side.

The day of the single-seater fighting scout, designed for high speed, manœuvrability and steep diving had arrived. The F.E., although a “pusher” type and a two-seater, must not be forgotten as, although it was not particularly fast, it was



THE VICKERS GUN BUS 1915. 80 H.P. GNOME ENGINE

respected by the enemy on account of its mobile forward gun. It was from a machine of this type that Lieut. McCubbin killed Immelmann. 1916 saw the production of the Sopwith triplane, a machine with a very fast climb, and it was thought by many people that the Fokker triplane, which appeared shortly afterwards, was a crib.

The famous Sopwith Camel now superseded the Pup and the S.E.5 also came into use. We must not forget that splendid aeroplane, the Bristol Fighter, which has only recently been retired from service by the Royal Air Force. By this time machines of both sides were using a special gear which enabled a Vickers machine gun to fire forward through the propeller.

By the end of 1917 the performance of fighting aeroplanes had improved tremendously and it was common to see them patrolling at a height of 20,000 feet or above. By 1918, the British had a large number of squadrons equipped with Camels, S.E.5A's, and improved types in the Dolphin and Snipe were beginning to arrive. The French were using Spads and Nieuports and the Germans were using improved Fokkers, Albatroses and Pfalz scouts.

These were the machines being used when the War ended and some of their principal features are dealt with in the following pages. It must be remembered, however, that no information regarding performance was allowed to be divulged at the time, and the figures must therefore be considered approximate, particularly as machines and engines of the same type were made in large quantities by different manufacturers with results that no doubt varied to some extent.

CHAPTER III

FAMOUS SQUADRONS

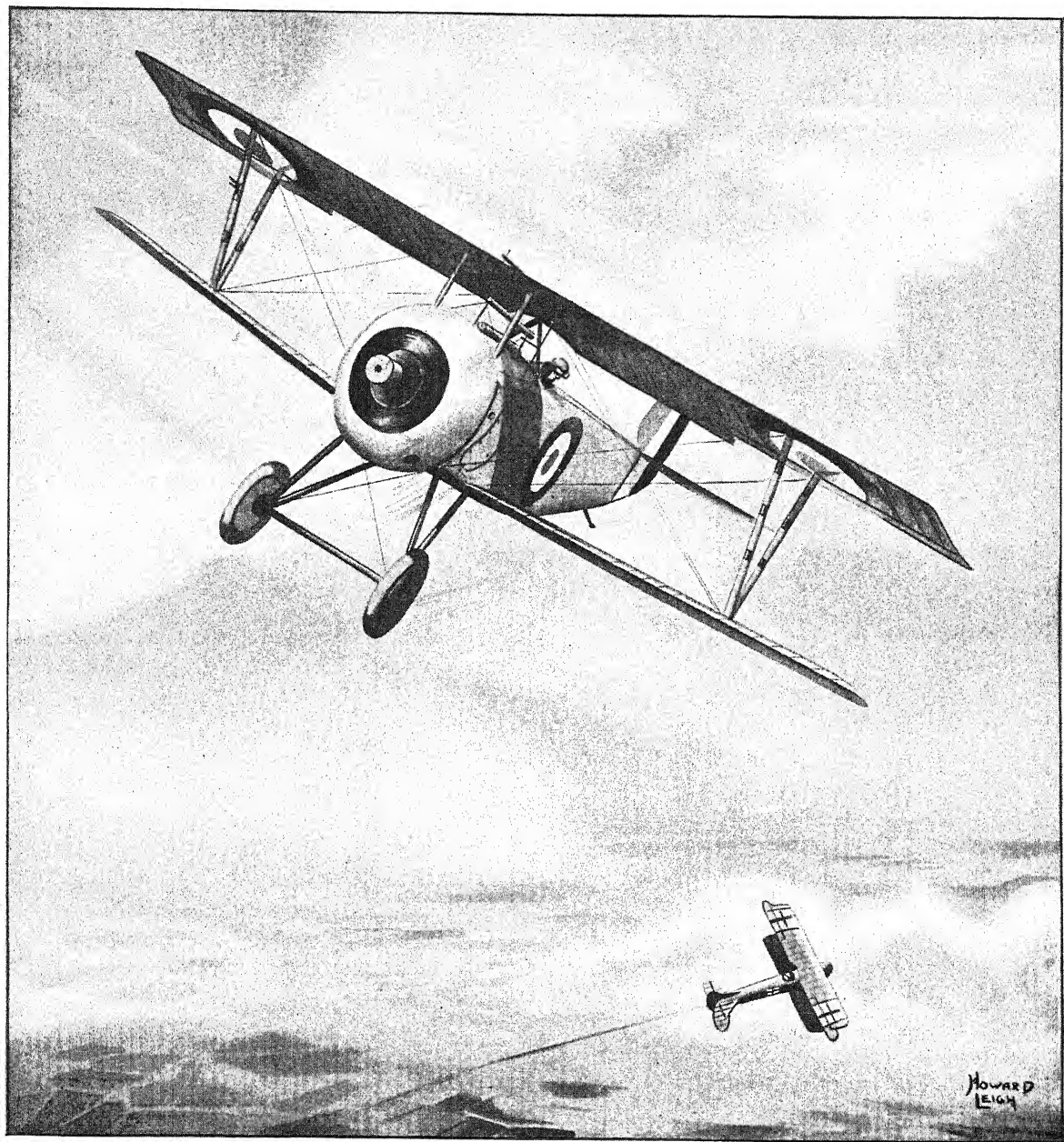
THE ESCADRILLES CIGOGNES AND LAFAYETTE

One of the most unfortunate things about the history of British aviation during the War is the absence of any formation or squadron with a high sounding name about which tales of derring-do can be written. The squadrons of the Royal Flying Corps were simply known by numbers, such as 56, 70, and so on, and they form a very colourless background on which the names of a few pilots of outstanding ability shine.

The leaders of other nations knew the moral value of publicity and exploited it to its fullest extent. Thus, the French knew not only the names of their popular idols, but the "teams"—so to speak—to which they belonged. One can well imagine with what feeling of pride a new pilot was posted to the renowned Cigognes or Lafayette Escadrille, although, as I have already explained, the question as to whether this was balanced by the inevitable disappointment of the pilots who were posted to lesser-known squadrons is an open one.

Officially, the French and German squadrons were, of course, known by numbers. The Escadrille Lafayette was really Escadrille de Chasse, Spad 124, and the Boelcke circus was Jagdstaffel No. 2, but to their idolizing nations they were known by their more romantic designations.

Everybody in France knew that René Fonck belonged to the Cigognes (the Storks), but how many people in this country could name the number of Ball's or Bishop's squadron? Again, the squadrons of other nations adopted crests which added



THE NIEUPORT SCOUT XXVII. 120 H.P. LE RHÔNE ENGINE

a certain glamour to their exploits. Thus, the insignia of the Escadrille Lafayette was an Indian head. Another had a black horse at full gallop, another a cock crowing, and another a black cat spitting, to name only a few of them. The British squadrons were satisfied with a plain, simple, identification mark, such as one or two white bands round the fuselage. The machines themselves were painted a drab indigo, brown or dark green. Those of other nations were painted in bright colours according to the particular fancy of the pilot.

Little can therefore be said about the British squadrons as a whole, for their official histories are for the most part plain statements of fact from which the human element has been eliminated as far as possible. Certain squadrons, such as No. 56 Squadron, which ended the War with a record of over 400 victories, produced more aces than other squadrons, and that is all that can be said about it ; there was no squadron formed entirely of aces as were some of the French squadrons. For instance, the French Escadrille N.3 (Nieuport 3), later the S.3 (Spad 3), was known throughout the length and breadth of France by reason of the brilliancy of its individual pilots and its prowess as a fighting unit as a whole. It was popularly called "The Cigognes" by reason of the stork device which was painted on each side of the fuselage of their machines. So famous did this squadron become that the names of its members became household words.

It was formed in April, 1915, with ten scout pilots ; its subsequent membership included the finest air fighters France produced, and of whom more will be said later.

The fame of the Escadrille Lafayette was, perhaps, better known in this country than that of the Cigognes because the majority of its members spoke English. They were, in fact, Americans and the manner in which they were brought together under the flag of France forms one of the most romantic stories of the War. Every war in the history of the world has produced a band of free-lance adventurers (in the real

sense of the word) who have flung themselves into the combat either because they were in sympathy with one side or the other, or purely and solely in order to satisfy a craving for adventure.

Obviously, men who have neither been compulsorily called to arms nor been actuated by mercenary motives, but who fight for the sheer love of fighting, make the finest soldiers. Their physical standard of fitness and their general morale must be exceptionally high, and thus it was with the Lafayette Escadrille.

When war broke out a little group of wealthy Americans were in Paris, on pleasure bent. They immediately offered their services to France. Now few nations willingly accept foreigners into their fighting forces for obvious reasons, but fortunately in this case there existed a means of entry. This was through the famous—or notorious—Foreign Legion, a French fighting unit stationed in North Africa which included in its establishment men of every nationality in the world. William Thaw, Bach, and Bert Hall (Hall had already been flying in the Balkan war) joined the French Foreign Legion and, after seeing service in Flanders, they managed to secure a transfer to the French Flying Corps. By the spring of 1915 several Americans were flying under the flag of France, and one of these, Norman Prince, conceived the idea of an American flying unit. They were wealthy and offered to buy their own equipment. The new Escadrille was formed and its first members were Thaw, Chapman, Rockwell, Norman Prince, McConnell, Cowdin, and Hall. It was stationed at the Bar-le-Duc Aerodrome adjoining the famous Cigognes and Escadrille N. 65, Nungesser's squadron.

Germany, and the German element in America, not unnaturally objected to American citizens fighting on the side of the Allies, and the title Lafayette was adopted to create a French atmosphere about the squadron. On May 24th, 1916, Rockwell was wounded, and a few days later Chapman was

killed, and the Escadrille tasted its first bitterness. Rockwell, who had continued to fly, was the next to fall, and in October, Prince was killed. By March, 1917, only one of the original seven remained in the squadron. By the end of the War forty Americans had made the great sacrifice under the Indian-head banner of the Escadrille. Thus did these gallant Americans give their lives for France and the Allied cause.

CHAPTER IV

THE GERMAN CIRCUSES

Before 1916 formation flying was crude and little attempt had been made to defeat enemy planes by concerted attack. Germany was fairly and squarely beaten in the air by the R.F.C.; General von Hoeppner, the head of the German Air Service at the time, admits it. The Higher Command decided that this state of affairs must stop, and they sat down to consider ways and means to do it. They noticed that one or two of their pilots who had lived long enough to gain experience were piling up modest scores, and one of these became famous for inventing a stunt which has since been copied by everybody. I refer to Lieut. Max Immelmann.

His *modus operandi* was to pull up as if he was going to loop, then he turned sideways over the vertical and came out in the opposite direction. It was a simple way of gaining height and at the same time reversing direction, but it so happened that no one else had thought of it. It took a lot of our fellows by surprise and, until the trick became known, he did well, but afterwards his score mounted less rapidly.

Immelmann was the first real ace and more will be said about him later. He was shot down in June, 1916, but before he went West he imparted a good deal of his knowledge to Oswald Boelcke who, by the way, took up flying after he had been rejected by the army on account of lung trouble. Boelcke carried on and soon equalled Immelmann's total of 16. The authorities became scared. His luck, they said, will not last, and they sent him back to do some instructing. But Boelcke was soon fed up with that and went to Headquarters with a new idea.



MAX IMMELMANN
German Ace

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THE BOELCKE CIRCUS

He prepared a scheme for grouping fighter pilots into "Staffels," a word which, literally translated, means steps. Each staffel consisted of "swarms," which were subdivided into "chains." He called these Jagd- (hunting) Staffeln. We called them circuses, and Boelcke was the leader of the first German Jagdstaffel, which normally consisted of about twenty machines. Boelcke had an aptitude for spotting likely pilots, and among his first selections were Manfred von Richthofen, Erwin Bohme, Max Muller, and young Immelmann (cousin of the ace) all of whom afterwards became aces.

On August 30, the Jagdstaffel took up its quarters at Lagnicourt. On September 17 Richthofen shot down Lieut. Morris (pilot) and Lieut. Rees (observer) and the Red Knight had started on his long line of victories.

On October 28, when his score stood at 40, Boelcke was killed. He was engaged in a fierce duel with a British machine when one of his pupils decided to take a hand and collided with him. Boelcke's machine broke up in the air, but as luck would have it, the pupil got away with it. He said that he never even saw Boelcke until they touched, and anyone who has ever sat in a dog-fight will have no difficulty in believing this.

Kirmaier took over the circus, which, by Imperial decree, was still called the Boelcke Jagdstaffel. On November 20, in a fierce fight with 70 Squadron (Sopwith Pups) Richthofen brought off a double, but Kirmaier went West. Duels to the death were now the order of the day. Richthofen met Major Hawker, V.C., and for half an hour they fought what must have been one of the most thrilling combats of the War. In the end Richthofen killed Hawker. He modestly put down his success to having a machine of superior performance, which was true enough.

The German Higher Command now grasped the wisdom

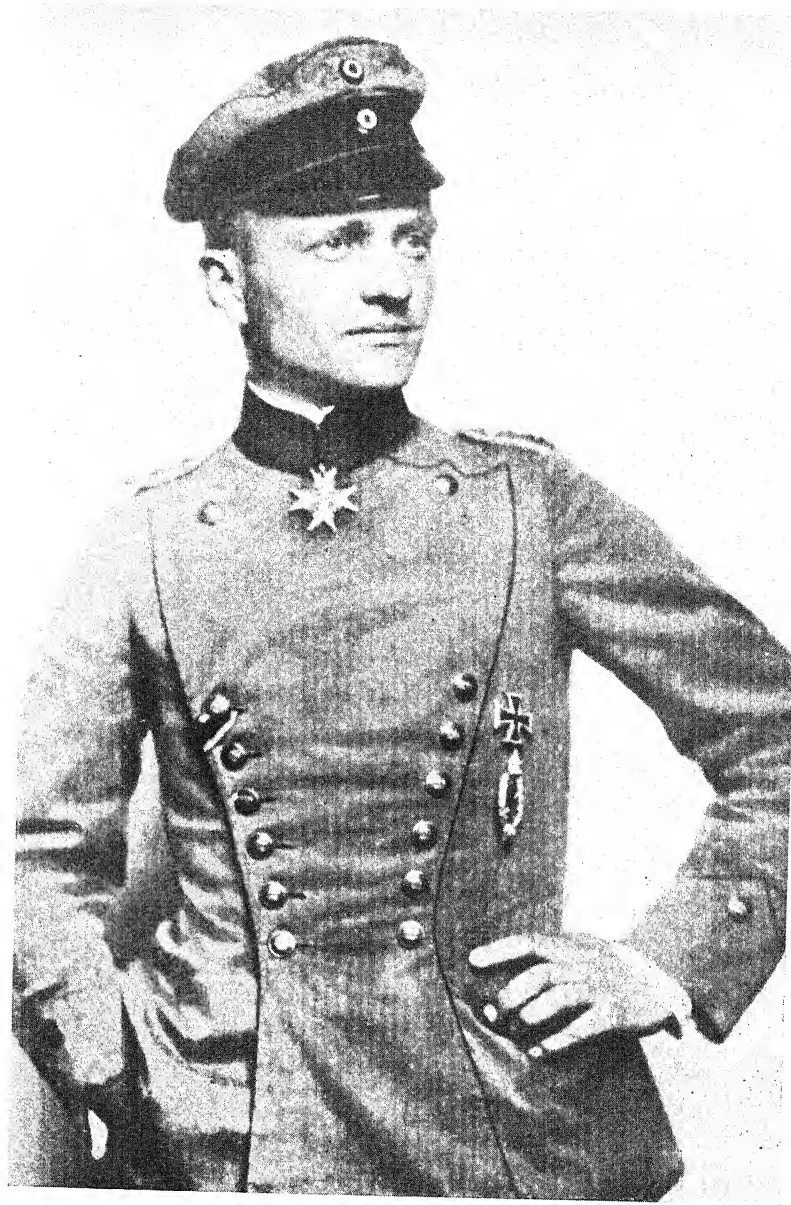
of the Jagdstaffel idea ; others were formed, and Richthofen departed to take over his own pack.

Thus was born the Richthofen circus. The original circus operated until the end of the War and its records show many famous names and scores. Bernert (27) and Voss, who, with skull and crossbones blazoned on his fuselage, was shot down by Lieut. Rhys Davis when his score stood at 48. Bohme (24), who fell at Zonnebeke, and Loffler (15), who fought his last fight over Paschendaele. Von Bulow (28), and Muller (36), who went down in flames over Morslade. Bolle (36), Gallwitz, Pappenmayer, Plange, and Kempt, were others. When they handed over their planes to the Allied Forces they had painted on the fuselage of each machine the name of its pilot and the number of his victories.

THE RICHTHOFEN CIRCUS

At the height of his fame Richthofen commanded Jagdeschwader No. 1, composed of four Staffels. With him at this time was his brother, Lothar, who, with 40 victories to his credit, survived the War only to be killed in a cross-country crash in 1922. There was Gussmann (10) and Wolff, not yet an ace, but who lived to score 33. There was Hans Weiss (16), who crashed to eternity about the same time as Wolff. There was the one-armed Karjus, who, since he shot down many two-armed pilots, must have been something of a wizard. There was Erich Lowenhardt, who piled up a score of 56 before a comrade accidentally sent him to his doom, and Wilhelm Reinhardt, who scored 20 and led the circus after Richthofen's death. There was Ernst Udet, who bagged 62 and survived to do some sensational flying for the films. He was over here only last year. These were the German fighters pitted against us in the height of the Red Knight's fame.

The circus had some curious superstitions. One was the use of the greeting, "*Hals und Beinbruch*"—in other



MANFRED VON RICHTHOFEN
German Ace

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words, "May you break your neck and legs." "*Gluck auf*" (Good Luck) would have turned any one of them pale with fright. Calamity, they said, would follow, and not one of them would fly on the day anyone greeted him in this manner. They would not allow themselves to be photographed, and it is curious to note that those of them who succumbed to this natural temptation of vanity did not last long. Richthofen himself broke the rule, and so did Boelcke, and they were both killed shortly afterwards.

After Richthofen had celebrated his fortieth victory there was a strong controversy in Germany. One faction said he must be sent back from the front because his luck could not last and his death would shatter the morale of an idolizing nation, and the other part said he must go on because his very presence put new life into every pilot along the line and inspired him to further efforts. Richthofen went on flying, but he admitted nevertheless that he was nervous. He had reached Boelcke's score, and he breathed a sigh of relief when he scored his forty-first victory. Curiously enough he was killed when his score was exactly double—80.

After the death of their leader most of the circus quickly followed him to Valhalla. Lowenhardt went down, like Boelcke, in a collision, but with one of our pilots. There was a tale in France at the time that the British pilot, hard hit, deliberately rammed him, and it may be true. Contrary to the popular idea, Richthofen could not just pick who he liked for his circus. He was sent the same raw material for replacements as any other squadron; he licked them into shape and then complained bitterly when they were taken away to command other Jagdstaffels. Naturally, every pilot in Germany wanted to serve under a man who had learnt the game in the Boelcke or Richthofen circus.

CHAPTER V

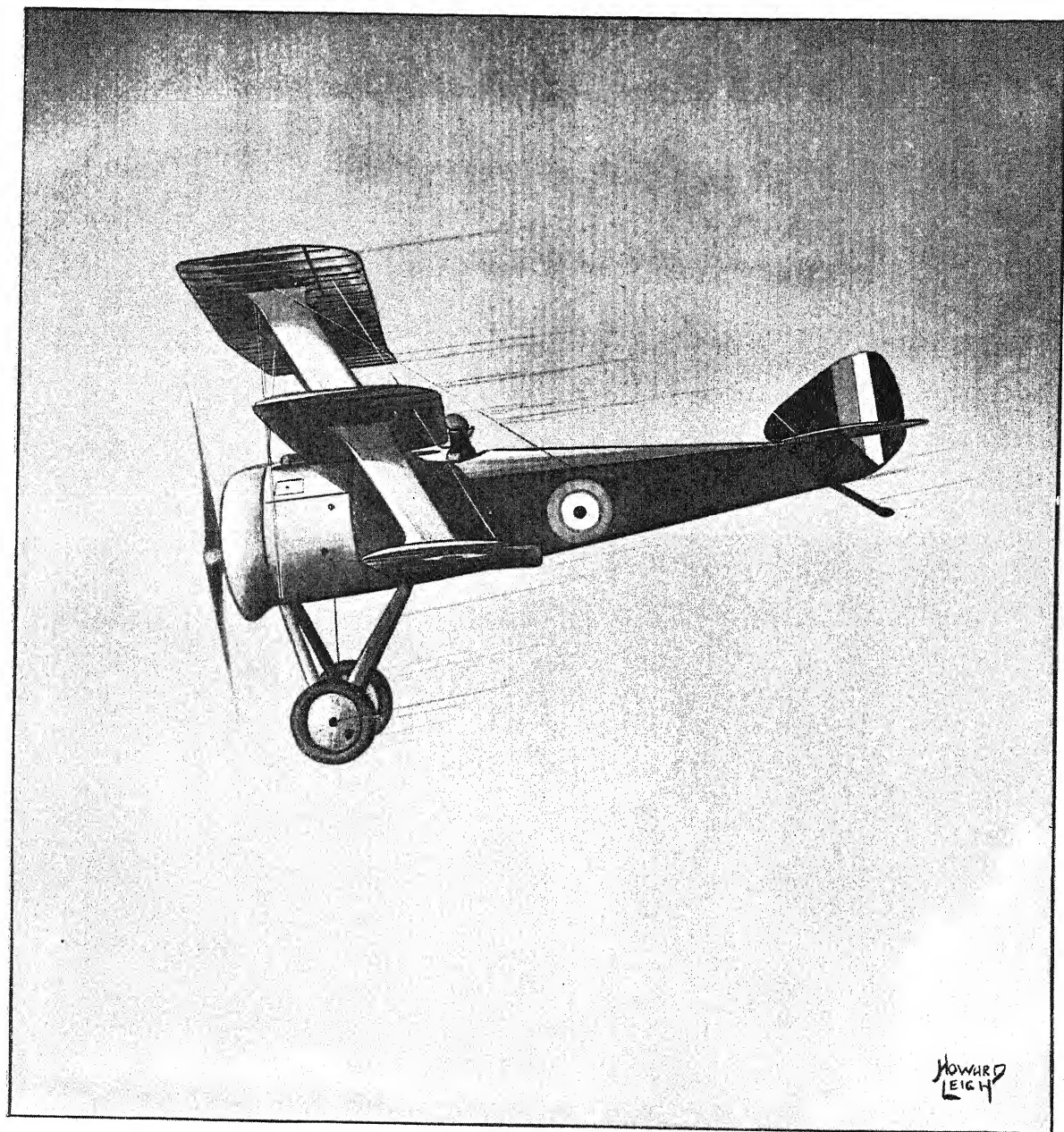
SOME FAMOUS FIGHTING PLANES

The Vickers E.F.B.5, or the Vickers Gun Bus, as it was afterwards affectionately styled, was the most famous of the early British machines. It was armed with a Vickers machine gun placed in the nacelle, a very advantageous position allowing the gunner a wide and almost uninterrupted field of fire. The pilot was close behind him and was thus able to co-operate closely with him.

The arrival of the Gun Bus on the Western Front marked a page in the history of military aviation for it did much to establish supremacy of the air for the Allies at a very critical moment. It was first fitted with a 80 h.p. Gnome engine which gave it a speed of between 60 and 70 m.p.h.

It was in a machine of this type that Lieut. G. S. M. Insall (now Wing Commander) won the Victoria Cross on November 7, 1915. With Air Mechanic T. H. Donald he was on patrol over the enemy lines near Achiet, when a hostile aircraft, either an L.V.G. or Aviatik (it was never definitely ascertained which as they were very much alike) was sighted. Lieut. Insall at once gave chase. The enemy aircraft led the Gun Bus over an anti-aircraft battery in the hope of shaking off its pursuer, but without success. After a thrilling duel the German machine was damaged and forced to land. The crew abandoned the machine and fled and Lieut. Insall, although under fire from the ground, remained until he had destroyed the machine with an incendiary bomb.

On the return journey to the lines the Gun Bus, which was flying very low, came under a vicious fire from all arms.



THE SOPWITH TRIPLANE

The tank was holed and the engine stopped over no-man's-land, but a successful landing was made just behind the Allied front line trench near the ruined Château d'Agny. The German artillery at once opened fire on the spot and the airmen took refuge in a dug-out until night fell, when they erected a screen of blankets and by the dim light of candles repaired the machine.

Shell holes were filled in and a run-way was made for a take-off. At the first streak of dawn the engine was started and, before the German batteries could fully realize what had happened, the Gun Bus was in the air heading for home.

THE SOPWITH TRIPLANE

The Sopwith Triplane, produced in 1916, was chiefly remarkable for its high rate of climb, but what it gained on the swings it lost on the roundabouts—so to speak—and it was neither safe nor very fast in a dive. It was sent to the Front however, and did some good work before it was replaced with a more efficient type. The Fokker Triplane appeared shortly afterwards and it had so many points in common with the Sopwith production that there were many people who thought, and still think, that the German triplane was copied from the British scout. It certainly suffered from the same inherent weaknesses.

THE BRISTOL FIGHTER

The Bristol Fighter was one of the most versatile aeroplanes ever constructed. I use the past tense because it is no longer used by first line R.A.F. units, but there are still a number of them flying. For an aircraft to remain in regular military service for sixteen years (it was not classed obsolescent until 1932), was a remarkable achievement and a tribute to its high qualities.

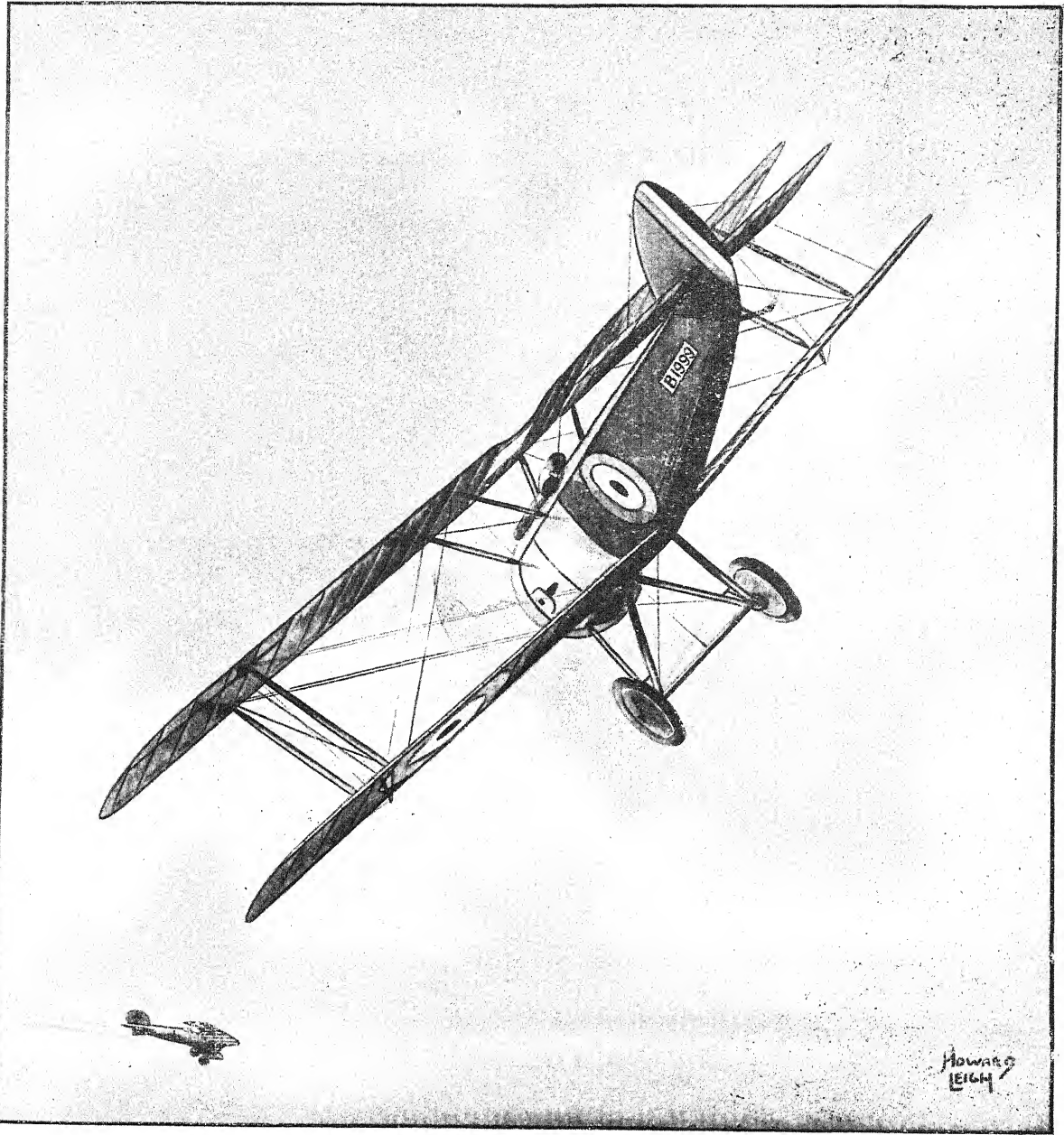
During the War, the Bristol Fighter, "Brisfit" or "Biff," to give it its most popular nicknames, carried out every possible duty that an aircraft could be called upon to undertake. As its name indicates it was primarily intended to be a two-seater reconnaissance-fighter, but it was soon called upon to do multitudinous other duties and expected to fight its own battles *en route*. It was used as a bomber, a reconnaissance machine, and a photographic plane. It spotted for the artillery and was used for trench strafing on occasions. It acted as escort to its sister planes who were less able to take care of themselves and it was also used as a training machine. It could stunt like a single-seater fighter and a hostile scout might well hesitate before attacking it single-handed.

The Bristol Fighter brought down a very large number of enemy planes. It was the machine flown by that remarkable pilot, Captain A. E. McKeever of No. 22 Squadron who shot down 30 enemy aeroplanes—a record for a two-seater pilot. Its armament was a Vickers gun fired through the propeller and a Lewis gun on a scarff ring in the rear cockpit.

In 1917 the Bristol was fitted with a 200 h.p. Hispano-Suiza or a Sunbeam "Arab" engine which gave it a speed of 120 m.p.h. Later, in 1918, the 250 h.p. Rolls-Royce Falcon III engine was used, which raised the speed to 125–130 m.p.h. It could climb to 15,000 feet in 21 minutes and land at the very slow speed of 48 m.p.h. Its chief dimensions were: span 39 ft. 3 ins.; length, 25 ft. 9 ins.; height, 10 ft. 1 in.; chord, 5 ft. 6 ins. and gap, 5 ft. 5 ins.

THE SOPWITH PUP

The Sopwith Pup was the forerunner of the famous Sopwith Camel and a lineal descendant of the Sopwith Tabloid of 1914. Its production was intermediate between the 1½ Strutter and the Sopwith Triplane, that is, between 1915 and 1916. It rapidly acquired a reputation for being one of the most



SOPWITH PUPS. 80 H.P. LE RHÔNE ENGINE

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delightful machines to fly that had ever been built. The power unit was an 80 h.p. Le Rhône rotary, and the Pup's performance with so low-powered an engine was remarkable.

A Vickers gun was fitted on the cowling to fire forward through the propeller. Its performance figures were : speed at 10,000 feet, 99 m.p.h. It could climb to 5,000 feet in 7 mins. 40 secs., and to 10,000 feet in 15 mins. 24 secs. The dimensions were : span, 26 ft. 6 ins.; height, 9 ft. 5 ins.; length, 19 ft. 3 ins.; chord, 5 ft. 1½ ins.; gap, 4 ft. 5 ins. The tank capacity was 18 gallons of petrol and 5 gallons of oil. The Pup was the equipment of many famous squadrons and fought many battles with the Boelcke circus.

THE SOPWITH CAMEL

The Camel was really an enlarged and modified Pup, designed specially for high performance and extreme manoeuvrability. To secure these ends some of the best qualities of the Pup were necessarily sacrificed and the Camel acquired a reputation for being uncomfortable and tricky to fly. It had considerable engine torque which caused it to spin viciously with little provocation, such as in a bad turn, and this resulted in many accidents in training. The early Camels also got a bad name for being likely to catch fire on landing. The nine cylinder Gnome-Monosoupape engine with which it was fitted had no throttle and no carburetter. To slow down the pilot had to cut out the ignition of certain cylinders. The petrol vapour which flowed through these cylinders was not used and went through the exhausts in an unexploded condition, and this was sometimes fired by the exhausts of the active cylinders. The result was a long streamer of flame flowing backward in the slipstream which was likely to set fire to the fabric.

Taking it all round the Camel was a tremendous success and did an immense amount of work in France in 1917. It

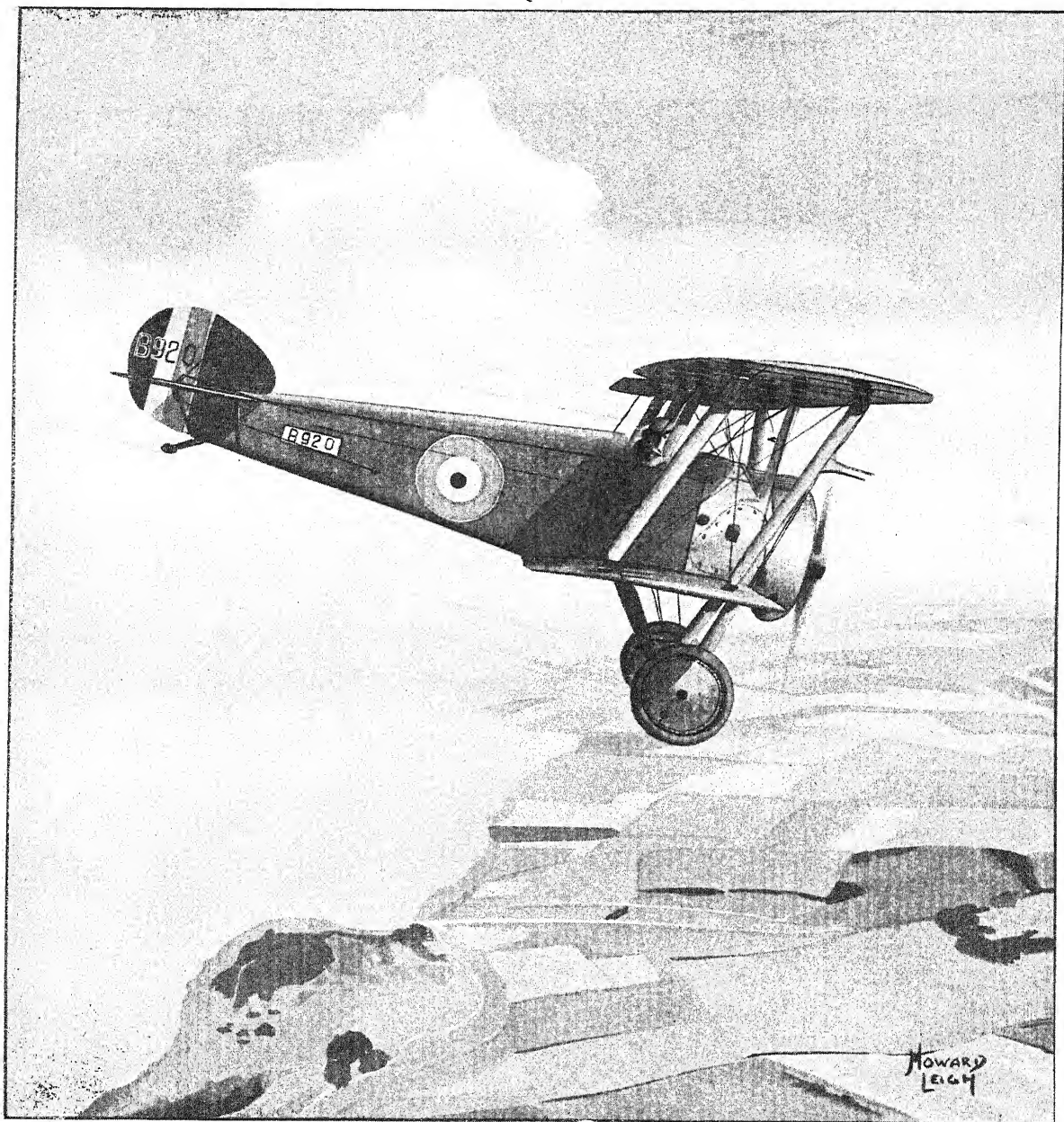
carried twin Vickers guns mounted above the engine cowling, firing forward through the propeller; in addition, a Lewis gun was sometimes mounted on the top plane. By the end of 1917 there were probably more Camels on active service than any other type of British plane, excepting perhaps the ubiquitous Bristol Fighter.

Its distinctive feature, and one which made it unmistakable, was the large amount of dihedral on the bottom planes and the flat top plane. It could climb to 12,000 feet in 12 mins. and its speed at that height was about 150 m.p.h. The Clerget engine replaced the Mono and later the Bentley rotary was used. The endurance of the Camel was $2\frac{1}{2}$ hours, in which time it consumed 26 gallons of petrol and $5\frac{1}{2}$ gallons of oil. It had a span of 28 ft. and length 18 ft. 9 ins. Its height was 9 ft., chord, 4 ft. 6 ins. Maximum gap, 5 ft., and minimum gap, 4 ft. 1 in.

There seems to be some doubt as to why the Camel was so named, but this was generally believed to be because of the slight hump in the fuselage just behind the pilot's head.

THE S.E.5

With the Camel the S.E.5 probably shared the distinction as being the best-known scout on the British side and the one that did most to establish our aerial supremacy in 1918. It was designed at the Royal Aircraft Establishment, South Farnborough, and was fitted with a 150 h.p. Hispano-Suiza engine which gave it a speed of 105 m.p.h. Later, the power output was increased and the machine became known as the S.E.5A. The 200 h.p. Hispano gave a speed of 115 m.p.h., and the 220 h.p. Hispano again increased the speed to 120 m.p.h. With the 240 h.p. Hispano, the S.E. had a speed of 125-135 m.p.h., and a ceiling of 20,000 feet, which was a better performance than the Fokker D.V (200 h.p. Mercédès engine)



THE SOPWITH CAMEL SCOUT. 150 H.P. BENTLEY ROTARY ENGINE

of the same period and about equal to the Fokker D.VII, with a 220 h.p. Mercédès engine. The armament of the S.E.5 was a Vickers gun firing forward through the propeller, controlled by a firing lever on the joystick, and a Lewis gun on the centre section which could be operated to permit vertical firing. The S.E. was the equipment of many famous aces; the letters S.E. originally stood for Sopwith Experimental, which was later changed to Scouting Experimental. R.E. (such as R.E.8) stood for Reconnaissance Experimental.

THE SOPWITH "1½ STRUTTER"

The 1½ Strutter was first produced in July, 1915, and was at once taken up by the French by whom it was used extensively in the closing months of that year. Several British squadrons were equipped with it soon after and it was used with good effect by many British pilots during the battle of the Somme in 1916. The Boelcke and Richthofen circuses were making things exceedingly uncomfortable in the air, and the Sopwith machine did much to check them. It was also used in the Middle East, notably on the Salonika front.

The 1½ Strutter was one of the first two-seater fighters specially designed for that purpose; it was really a two-seater version of the Pup. It had a long life in France on the Western Front and was fighting an unequal fight against the enemy's superior equipment as late as April, 1917.

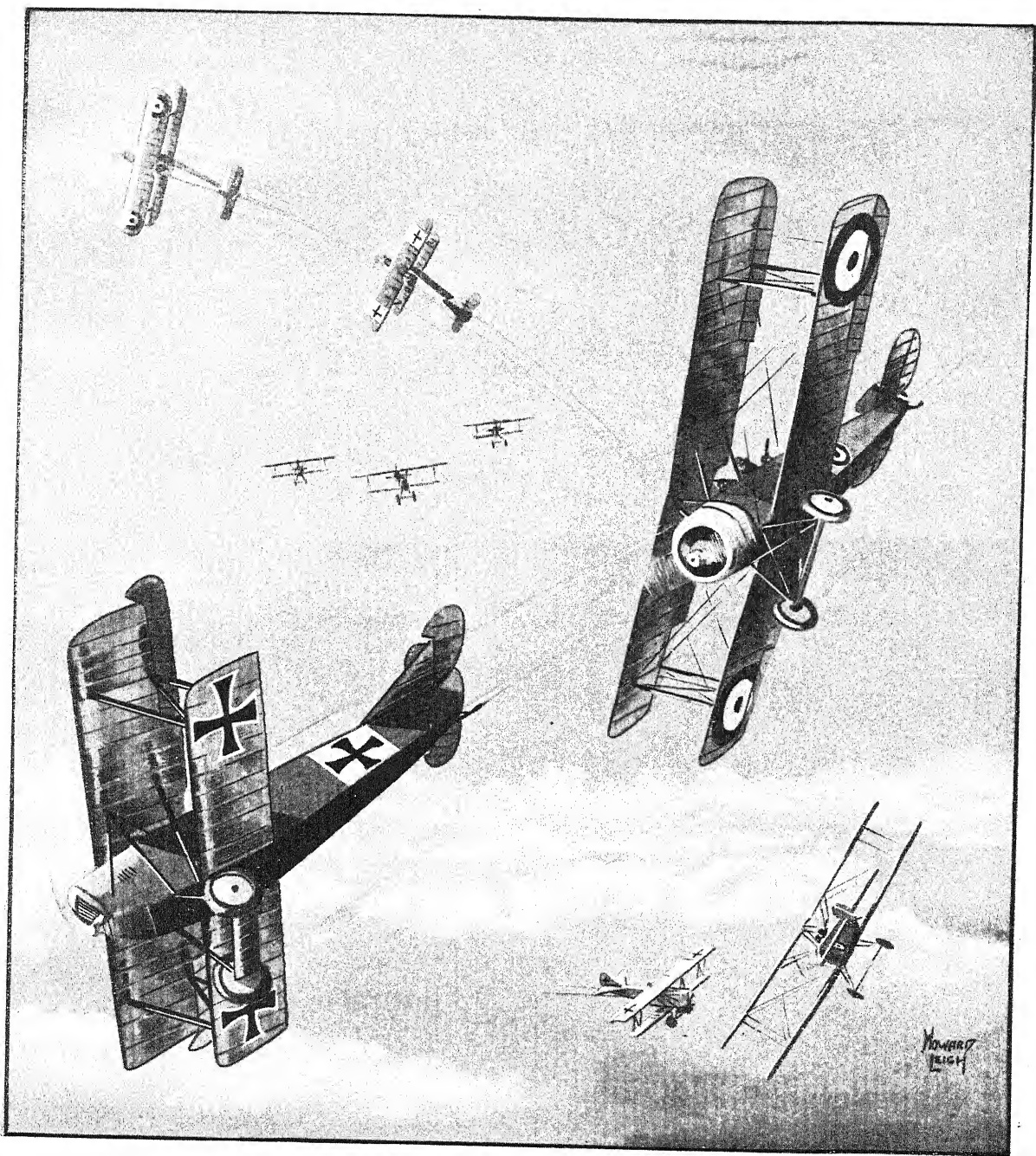
The armament was one Vickers gun firing forward through the propeller and a Lewis gun mounted in the observer's cockpit. It is worth noting that, in 1915, the 1½ Strutter broke the British altitude record by reaching a height of 18,400 feet. The name was derived from the unusual centre section struts, which gave it the appearance of having one and a half interplane struts.

FRENCH WAR PLANES

Military aviation in France began as long ago as 1910 and in September of that year for the first time in history aerial manoeuvres took place in Picardy. On the outbreak of war all civil flying was prohibited in France except by military pilots and the authorities concentrated on producing military types with the utmost speed. The earlier types, Bleriot, Maurice Farmans, Morane-Saulniers, and Caudrons were as clumsy and as unmanoeuvrable as our own, indeed, in those early days Great Britain and France were using the same types.

The first real fighting plane produced by France was the Nieuport scout. There were, of course, a long line of Nieuports ranging from the first single-seater monoplane with an Anzani engine, and which had a speed of 40 m.p.h., to the 220 h.p. Hispano-Suiza and 240 h.p. Renault engined models of 1917 and 1918 which could travel at 115 and 125 m.p.h. respectively. It was the Nieuport XXIII fitted with a 110-120 h.p. Le Rhône engine, which increased the speed of the 1915 model with its 100 h.p. Gnome engine, that really established the reputation of the machine. Its speed was about 105 m.p.h., and it was flown by Fonck, Guynemer, Nungesser and other leading French aces. The 160 h.p. Gnome-engined model of 1917 again lifted the speed to 115 m.h.p. and the 220 h.p. Hispano-Suiza engine raised the speed 115-120 m.p.h. in 1918.

The Spad superseded the Nieuport as the equipment of most of the leading French squadrons. In fact, nearly every fighter squadron in France was equipped with this famous machine at one period. It was also adopted by several British squadrons, and by the Americans when they entered the War, purely on its merits. The 1916 Spad, a single-seater biplane, was fitted with a 140 h.p. Hispano-Suiza engine, which gave it a speed of 105 m.p.h. In 1917 the 220 h.p. Hispano-Suiza raised the speed to 120 m.h.p. and the beautifully



SOPWITH "1½ STRUTTERS" ON THE WAR PATH

streamlined 1918 type with its 300 h.p. Hispano engine, again raised the speed to over 130 m.p.h.

The Spad was claimed by many people to have been the finest fighting aeroplane produced in the War, and that may be true. It was not an easy machine to fly, but once its habits were understood its pilots swore by it. The Spad used by Guynemer when he scored 19 victories in record time may still be seen in the War Museum in Paris. Its dimensions are given in detail as it is a popular subject among model makers. They are as follows: span of upper plane, 25 ft. 8 ins.; lower plane, 25 ft. ; length, (from centre of propeller boss), 20 ft. 3 ins.; chord (top plane), 4 ft. 7 ins.; chord (lower plane), 4 ft. 2 ins.; gap, 3 ft. 8 ins.; dihedral, nil ; incidence, 2 deg.; stagger, 45 m.m.

CHAPTER VI

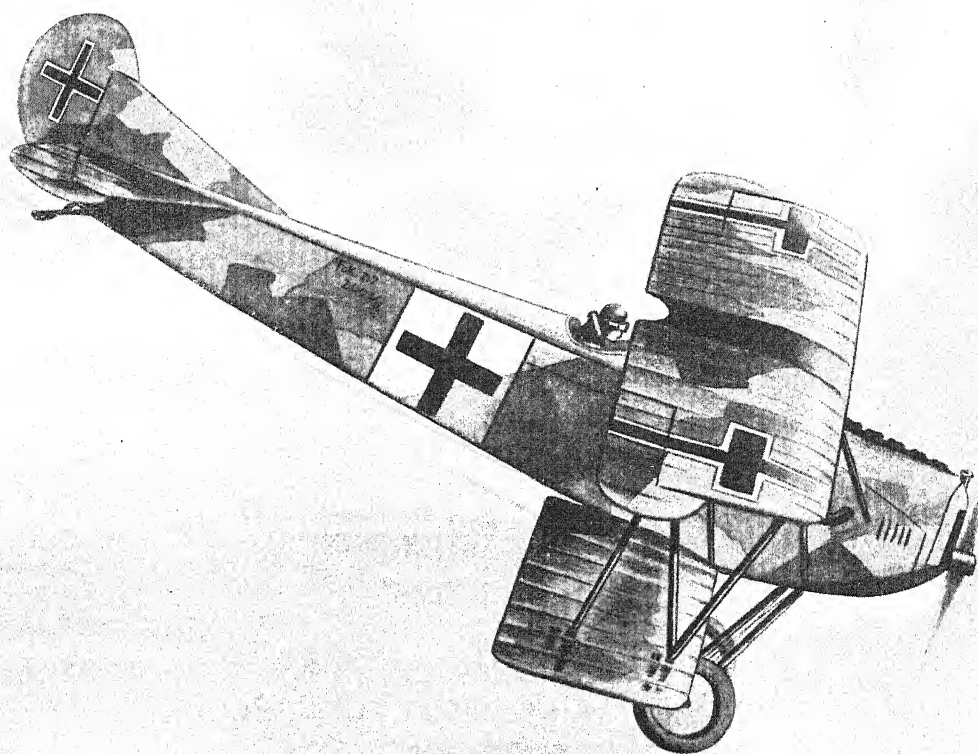
GERMAN AEROPLANES

The aeroplanes supplied to the German pilots were on the whole very similar in performance to those used by the Allies at the same period. If at any time a machine of exceptionally high performance made its appearance it was not long before one was in the hands of the other side, and its best points copied. The notorious Fokker scourge in 1915 which gave Germany a definite lead in the air for some months was an exception rather than rule, and as far as equipment was concerned neither side held an advantage for very long. As a matter of fact the Fokker which caused the trouble was really an improved version of the French Morane monoplane.

Antony Fokker, a skilful Dutch pilot, brought his machine to England before the War in order to sell it, but the War Office turned it down and their mistake was soon to become apparent. Fokker went to Germany, and when war broke out his aeroplanes did much to make things difficult for the Allies who were flying machines of inferior performance.

As a matter of fact, the early Fokker machine was very difficult to handle and the maker himself had a very narrow escape one day when it crashed and killed the German officer who was his passenger. He produced a vast quantity of machines during the War and the word Fokker became almost universally known to mean a German aeroplane, irrespective of its type.

It was quickly discovered that the qualities of speed and altitude were of vital importance in air combat and an examination of the race for aerial supremacy reveals a steady increase



THE FOKKER D VII SCOUT 1918. 220 H.P. MERCEDES ENGINE

in speed and climb. Progress was particularly noticeable in the matter of altitude. The Vickers Gun Bus only managed to struggle to a mere 8,000 feet, and that was higher than any other machine could get at the time. By the end of 1916 the B.E.2C had lifted the ceiling to 14,000 feet, but it was not long before the first German Albatroses sailed in and looked down at the B.E.'s from 18,000 feet. Those were bad days for B.E. pilots. The Pup lifted the ceiling again for the British, but the Fokker went to 20,000 and the S.E.'s and Camels came along and fought them at that altitude. At the finish the Sopwith Dolphin took the palm with a ceiling of 24,000 feet.

Germany's last word was the Fokker D.VIII, a parasol monoplane fitted with a 200 h.p. Goebel rotary engine. Little is known about this machine and many war pilots were sceptical about its existence. I must confess that I never saw one myself, but it only appeared in the last few days of the War and by that time I was in Germany. The War ended before it could make a name for itself, but there is no doubt that it was a fine performer and would have made things hot for the Allies.

A Fokker D.VII, which was probably the best-known German aeroplane in 1918, was captured intact soon after it appeared. A story has been told that a British agent in Belgium bribed a German N.C.O. to fly it over and land it behind the British lines for a ridiculously small sum and a safe conduct until the end of the War. Whether this is true or not does not matter, but it is certain that a D.VII was sent to England for the attention of designers. I saw it after its black crosses had been replaced by the red, white and blue circles. It was tested by a well-known pilot who fought another test pilot in a Martinsyde F.III scout, which was fitted with a 275 h.p. Rolls-Royce Falcon engine. The D.VII had a 200 h.p. Mercédès. The "Tinsyde" was claimed to have a speed of 145 m.p.h. and a ceiling of 27,000 feet. The per-

formance of the D.VII was nothing like this, but it was judged to be the victor of the combat. The pilots changed mounts, but the result was the same. So much for manoeuvrability.

I have never been able to discover the real ceiling of the D.VII, but I know that at 21,500 feet in a D.H.4 with a Rolls-Royce Eagle VIII engine, they have made rings round me. The speed of the D.VII was between 130 and 140 m.p.h.

The increase in the matter of speed of the Fokker machines is interesting. The 1915 monoplane with a 100 h.p. Oberursel engine had a speed of between 85 and 95 m.p.h. The Fokker D.I biplane of 1916 with a 160 h.p. Mercédès engine had a speed of 95 to 105 m.p.h., and the 100 h.p. Oberursel engined biplane of the same period (the D.II) was about the same. In 1917 the D.IV with a 175 h.p. Mercédès lifted the speed to 110-120 m.p.h. and the D.V. with a 200 h.p. Mercédès could travel at 125-130 m.p.h. The D.VII, as I have said, had a speed of 130-140 m.p.h. which was slightly faster than the Fokker triplane.

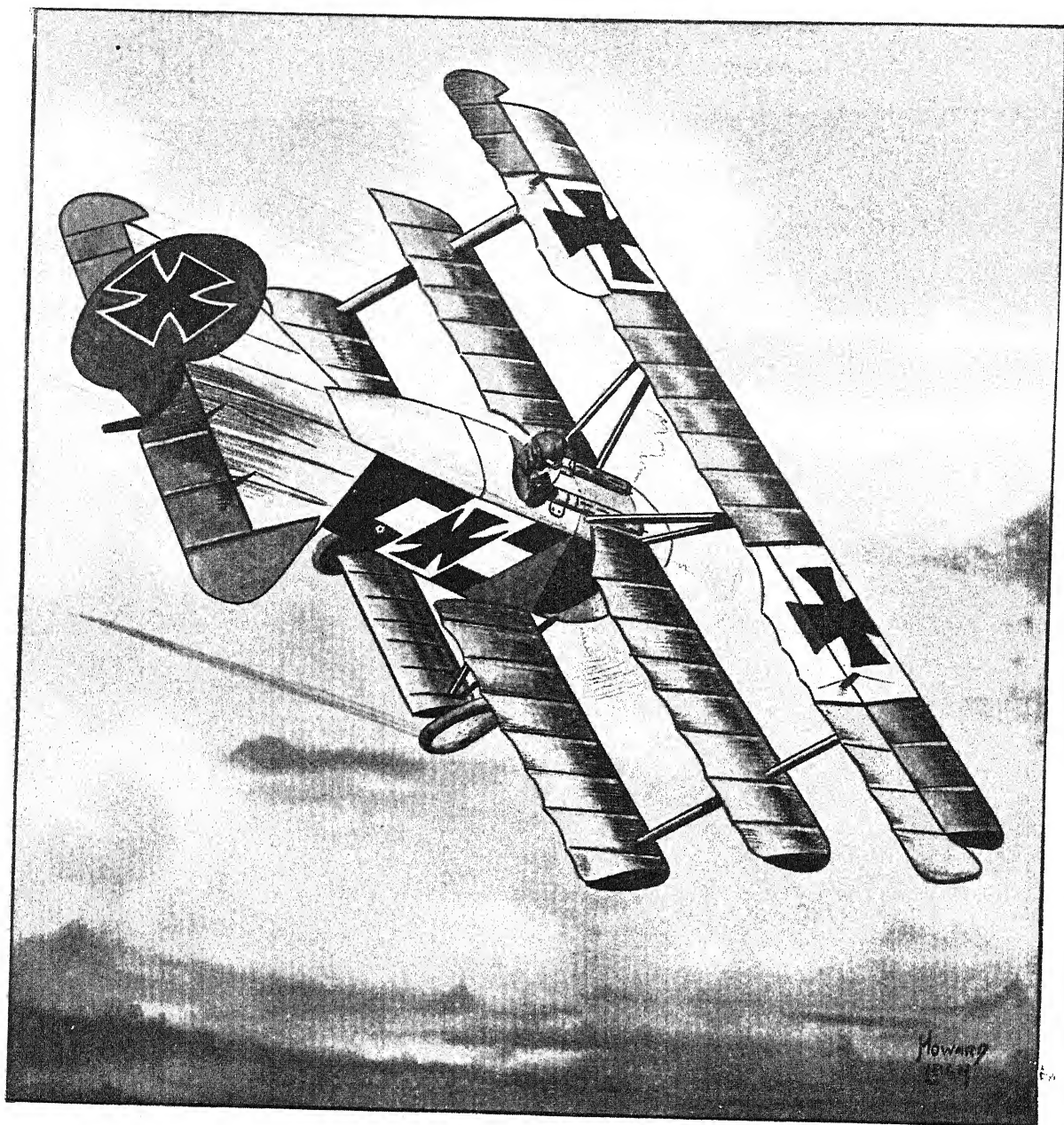
THE ALBATROS

The Albatros Werke, one of the most important aircraft factories in Germany, was established in 1910 to build Farman and Antoinette machines. In 1911 the Taube was produced and several other machines of the type followed. In the early part of the War little was heard of the Albatros machines, but in 1916 a fast Albatros single-seater fighter appeared and did a lot of damage amongst the Allied machines.

As in the case of the Fokker there was a long series of Albatros scouts until the end of the War. With the exception of the fighter mentioned above, which was fitted with a Benz engine, and a 200 h.p. Warcholowski engined two-seater biplane used solely on the Austrian front, they were all fitted with Mercédès engines of various powers. They were all



THE PFALZ SCOUT DIII 1917. 160 H.P. MERCEDES ENGINE



THE FOKKER TRIPLANE 1918. 110 H.P. OBERURSEL ENGINE

biplanes with the exception of a single-seater triplane produced in 1917 of which little is known.

Perhaps the best known of the Albatros scouts were the D.III, fitted with a 175 h.p. Mercédès engine (1916-17) which had a speed of 120 m.p.h. and the D.V. the type illustrated. The D.V. had a 225 h.p. Mercédès engine and was claimed to have a speed of 135-140 m.p.h. The shark-like bodies of these machines and the characteristic tail units were unmistakable.

THE PFALZ SCOUTS

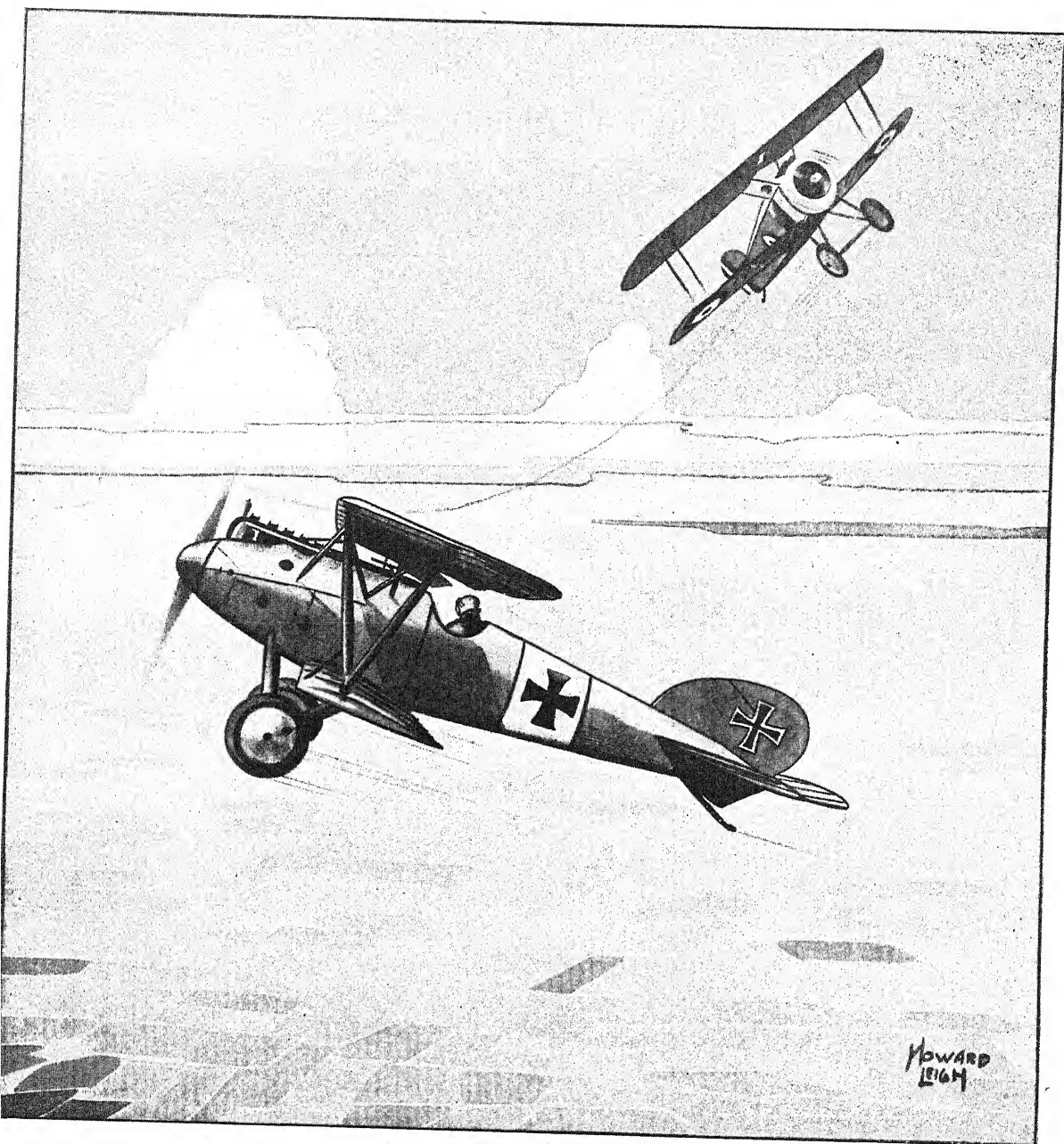
There were three Pfalz scouts which made names for themselves during the War, all fitted with the Mercédès engine. The machine illustrated is the D.III type which was fitted a 160 h.p. engine. Two Spandau guns fired forward through the propeller. Its ceiling was just under 18,000 feet, and its speed estimated to be 105 m.p.h. Later the Pfalz was fitted with a 180 h.p. Mercédès, and in 1918 with the 220 Mercédès which gave it a speed of 125-130 m.p.h. The Pfalz was beautifully streamlined and the unusual tail unit identified it at once.

OTHER GERMAN FIGHTERS

Little is heard of other German fighting planes, yet there were many. The Aviatik series included some useful machines, but nothing of an outstanding nature. The single-seater Aviatik with a 120 h.p. Argus engine did useful work in 1915-16. More powerful machines of the class were in use in the beginning of 1918, after which the firm specialized in two-seater reconnaissance machines.

There were the Halberstadt and Roland scouts of 1916 and 1917. Mention should also be made of Taube about which so much was heard in the early days of the War, either because of its characteristic swept back wings, or because of

the tendency of the infantry to call everything with black crosses on it a Taube. It was a single-seater monoplane with an Argus engine, but its speed was only about 50 m.p.h. Other well-known German machines were the Rumplers, Hannoveranas, L.V.G.'s and A.E.G.'s, but these were chiefly of the bomber and reconnaissance class.



THE ALBATROS SCOUT

CHAPTER VII

THE BRITISH ACES

The order in which the British aces appear in this chapter has been determined by the number of victories gained, not by the dates on which they first came into the public eye. It must be remembered that, for some reason or other, little was heard of certain air fighters, while the names of others were almost household words. In many cases it is hard to see why this should have been, but in others the reason is fairly obvious. The names of Mannock and Collishaw were certainly not known to the public, yet they scored 73 and 68 victories respectively—first and third on the British list. Albert Ball's fame probably sprang from the fact that he was the first great English ace and that he was still in his teens at the height of his fame. Bishop was a Canadian and it would seem that Colonial heroes always received their full share of publicity.

MAJOR EDWARD "MICKY" MANNOCK, V.C., D.S.O., M.C.

Edward Mannock was the British ace of aces, yet for some reason his name was never blazoned forth, and even in France neither his name nor exploits were so well known as those of many contemporary air fighters. To-day, many people have never heard of him and there may be several contributing factors to account for this. In the first place he shunned the limelight and went out of his way to help others rather than trouble to confirm his own victories. Secondly, he was considerably older than the average ace; the achievements of a man of twenty-nine may, not

capture public imagination like those of a boy under twenty. Then there was the speed with which his score mounted. He literally streaked across the sky of France leaving a trail of blazing enemy machines in his wake and had vanished into the mists of obscurity almost before those who were responsible for the issue of decorations were aware of his activities. It was a year after his death before the Victoria Cross was belatedly awarded to him.


When war broke out Edward Mannock was twenty-six years of age and employed as a Post Office engineer in Turkey. He was interned by the Turks, but repatriated in 1915, chiefly because it was thought that he had defective vision, which would make it impossible for him to become a combatant. Incidentally, it is an astounding fact worthy of note that many of the leading aces on both sides were rejected for regular service on account of some infirmity.

Mannock was a striking figure, nearly six feet tall, with a typical lean, sunburned, Irish face. He looked every inch a fighter. He enlisted in the ranks of the R.A.M.C. and in April, 1916, was given a commission in the Royal Engineers. In August of the same year he transferred to the R.F.C., and was thus twenty-nine years of age when he began his brilliant career as a knight of the air. He learned to fly at Joyce Green on D.H.II's, where he came under the eye of the famous Jimmy McCudden, who said of him, "Mannock is a typical and impetuous Irishman . . . the type to do or die."

In April, 1917, he was posted to France, to No. 40 Squadron, and on May 7, he shot down a balloon in flames—his first victory. Albert Ball was killed on the same day, and it seems a curious twist of fate that Mannock should take up the lance, so to speak, from the very day that the "boy" ace fell. On June 7 he shot down his first enemy plane, a Halberstadt, near Lille. At this period he was flying a Nieuport scout fitted with the 110 h.p. Le Rhône rotary engine. On the 19th of the same month he was awarded the M.C., and



MAJOR MANNOCK, V.C., D.S.O.
British Ace

 Edward Oldham

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after a period of leave was posted as a Flight Commander to No. 74 Squadron, equipped with S.E.5A's. Between April 12 and June 17, 1918, he destroyed twenty-two enemy machines. He was given command of No. 85 Squadron, also equipped with S.E.5A's, and his score mounted rapidly. It would take too long to narrate his combats in detail, but scarcely a day passed without bringing him a victory. On July 26, when his score stood at 73, his machine was seen to fall in flames behind the German lines, and as so often happened, it was difficult to account for the exact cause of his death. He had shot down a German two-seater in flames which was flying very low, and whether it was a bullet from this machine or a shot from the ground we shall never know.

Of him the Air Ministry said, "this highly distinguished officer was an outstanding example of fearless courage, remarkable skill, devotion to duty, and self sacrifice, which has never been surpassed."

COLONEL WILLIAM A. BISHOP, V.C., D.S.O., M.C., D.F.C.

Major "Billy" Bishop, a Canadian, was probably the only man to receive three decorations from the King on the same day. Just over twenty years of age he had been educated for a military career when war broke out. He came to England with the Canadian Mounted Rifles, but becoming sick—as he himself says in his book, *Winged Warfare*—"of wallowing in the mud," he transferred to the R.F.C. That was in 1915. He went to France as an observer, but in May, 1916, after four months in the observer's cockpit, he was rather seriously hurt in a bad landing and went to hospital.

On his discharge he learned with gratification that he was to be trained as a pilot. By the end of 1917 he was the leading ace in the Royal Flying Corps and his exploits were known all over the world. At one period he shot down 45 enemy planes within five months. Altogether he probably shot down more

than 100 machines, but he was officially credited with 72.

On March 7, 1917, Bishop, now wearing his pilot's brevet, flew his machine to France to join No. 56 Squadron—Ball's Squadron. The battle of the Somme was in full swing and air combats were the order of the day; nevertheless, it was not a good time to begin an apprenticeship for the air was being swept by many crack pilots of the opposing side on the lookout for easy victories. At this period Bishop was flying a Nieuport scout, a machine of French design, and perhaps the best machine in the air at the time, although its V struts often got it into trouble through being mistaken for a German plane.

On March 25, in company with three other Nieuports, he engaged three Albatroses. He picked out his man and attacked with such fury that the Albatros quickly fell out of the fight. Bishop had evidently learnt some of the tricks of the trade for he followed his man down. As he suspected it was a trick, and near the ground the German machine flattened out and made for home. Bishop was waiting for just such a move and was ready to finish off what he started. The Albatros went down in flames. The victor turned for home, and at this moment his engine cut out. He glided towards the lines, certain in his mind that he could not reach them. The machine struck the ground in a sea of shell-holes, but to his surprise and joy the pilot heard British voices. He had crashed on the British front line, on ground which only a few hours before had been held by the enemy! Such was the luck of the game, and thus did one of Britain's leading aces escape having his career cut short by a matter of minutes. Had the wind been against him as he glided down nothing could have saved him from falling into the hands of the enemy.

His victories now came fast, but he was disappointed with his own progress and worked out all sorts of schemes to accelerate it. Perhaps his greatest exploit was a single-handed attack on a German aerodrome. He flew over early one



COLONEL W. A. BISHOP V.C.
British Ace

Imperial War Museum Photo.

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morning and sprayed the sheds with machine gun bullets. As the first German machine attempted to leave the ground he swung down on its tail and it crashed on its own aerodrome. Another attempted to take off and shared the same fate. Another crashed into the trees.

He attacked observation balloons, enemy transport, and machine gun nests with zest and considerable effect. By April he had scored his fifth confirmed victory (Ball's score at the time was 35) and he was promoted to Captain. Victories at this time were not easy to get, and most of his opponents were members of the redoubtable Richthofen circus. The story of his progress reveals judgment, utter fearlessness, considerable skill, and a fair amount of luck. Time and time again he found himself in predicaments from which not even his skill and courage alone could have extricated him. He preferred to fight single-handed, many of his combats taking place far over the line. He was a real roving free-lance ace and a true knight of the air.

COLONEL RAYMOND COLLISHAW, D.S.O., D.S.C., D.F.C.

Colonel Collishaw (now Wing Commander) is still serving in the Royal Air Force, which probably explains why his war-time exploits have been kept in the background by the Air Ministry. Let us hope he will one day present the world with a book which everyone interested in military aviation will welcome with open arms.

His name appears quite early in the War and it crops up regularly in the official records until the end. Thus we read of a Lieut. Collishaw, a young Canadian officer in the R.N.A.S., spotting a concentration of German troops near Verdun. The French headquarters to whom he made his report no doubt profited by his keen eyesight. On June 1, 1917, we heard of him shooting down an Albatros in flames; on the 3rd another; on the 5th, he shot down two; on the 6th, he shot down two

in flames and killed the pilot of a third. He had already been awarded the D.S.C., and for these exploits he received the D.S.O. By the end of the War a score of 68 confirmed victories stood to his credit.

At the moment of writing Wing Commander Collishaw is serving on H.M. Aircraft Carrier "Courageous." His name is third on the British list of aces.

MAJOR JAMES BYFORD McCUDDEN, V.C., D.S.O., M.C., M.M.

"Jimmy" McCudden of No. 56 Squadron stands fourth on the British list of aces and his career as an air fighter was perhaps the most amazing of the whole War. He served in France in 1914, 1915, 1916, 1917 and 1918. Starting as a bugler he soared through every rank in the R.A.F. to that of Major before he was twenty-one years of age. He also served in every possible capacity—ack-emma, aerial gunner, observer and pilot. He won every decoration his country could bestow upon him. He shot down 57 enemy planes, on one occasion shooting down no less than 14 in four flying days. He was shot down himself without injury and was, at last, accidentally killed in the most tragic circumstances when he was returning from England after a period of leave.

James McCudden was born at Gillingham, Kent, in March, 1895. His father, a soldier, was an Irishman, and he set out to follow in his footsteps. He left school when he was fourteen and entered the Royal Engineers as a bugler. In 1913 he transferred to the R.F.C., in which his brother was already serving. War came, and on August 12 he proceeded to France with No. 3 Squadron as a mechanic. He appears to have been something of a "wizard" with engines and he was soon flying in B.E.'s as an aerial gunner.

In 1915, while serving in this capacity, he shot down two enemy planes, each with one short burst, a feat which created something of a sensation among the officers of his squadron.



MAJOR J. B. McCUDDEN, V.C.
British Ace

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In 1916 he was promoted to Flight Sergeant and returned to England to learn to fly; he made such rapid progress that he was soon instructing at the Central Flying School. On July 5 he flew back to France in a B.E.2d, to No. 20 Squadron, and his career as a knight of the air began in earnest.

He was soon posted to No. 29 Squadron to fly single-seaters—D.H.II's—and on September 6 he shot down a German A.E.G. machine which crashed in flames on the Menin road—the first of his long line of 57 victories. In January, 1917, he was shot down himself by a Fokker D.II, and the manner of his escape gave him food for thought. He got a note book and set about mastering the art of air combat seriously. He made notes of the tactics of the enemy and the performance of his equipment; he even jotted down particulars of individual machines and the ability of the man in the cockpit. He was rewarded for his trouble and patience and soon scored three more victories.

He was sent back to England as an instructor and among his pupils were "Micky" Mannock and his own brother, Anthony McCudden, who, before he was killed in combat in April, 1918, scored 11 victories. He was soon tired of instructing and returned to France for duty with the rank of Captain to No. 66 Squadron which were equipped with Sopwith Pups. Nearby was No. 56 Squadron, the crack British Squadron equipped with S.E.5's. One day while on a visit he borrowed one of the Squadron machines and shot down an Albatros.

He was very keen to fly S.E.'s, and in August, 1917, he was transferred to No. 56 Squadron. He was fighting daily duels and his score crept steadily upwards. At that time 56 Squadron "game-book" showed a record of 200 enemy planes shot down in five and a half months, which easily beat the record of the famous Richthofen circus of 200 Allied planes in seven months. On one day in December he scored four victories. A few days later he shot down three more in one day.

He took the spinner off the propeller boss of one of the L.V.G.'s that he had shot down, painted it red, and fixed it on the nose of his own machine ; he was delighted to find that it put an extra three miles per hour on to his speed by reason of the improved streamlining. He took it for a lucky omen. In February, 1918, when he had 57 machines to his credit, he returned to England for a rest.

In July he was appointed to command No. 60 Squadron. He flew across the Channel and landed safely in France. On leaving the aerodrome on which he had landed something went wrong with his machine and the valiant conqueror of 57 German airmen crashed to the ground. When the horror-stricken spectators reached the scene the gallant knight of the air was dead.

MAJOR W. G. BARKER, V.C., D.S.O., M.C.

The career of Major Barker has many points in common with that of Colonel Bishop. Both were Canadians who began their military careers in the cavalry.

Major Barker fought on the Western and Austrian fronts. He survived the War with a record of 52 confirmed victories only to lose his life in a commercial aeroplane accident in Canada in 1930.

"Billy" Barker, as he was affectionately styled by his friends, was a man of fine physique. At the age of twenty he enlisted in the Canadian Mounted Rifles and he served with them in France as a private until 1915, when he transferred to the R.F.C., receiving his commission as second-lieutenant on April 2, 1916. For six months he served as an observer employed chiefly on artillery observation duties, and while so doing received his first decoration ; he was awarded the M.C. for conspicuous bravery and determination under fire.

He returned to England to learn to fly and, although he must have had many opportunities of handling the "stick"



Imperial War Museum Photo

MAJOR W. G. BARKER, V.C.
British Ace

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as an observer, he proved such an apt pupil that he flew solo after one hour of dual instruction.

February, 1917, saw him back at the front flying two-seaters, once more on artillery observation and reconnaissance duties. Within three months he was promoted to the rank of Captain and returned home for duty as an instructor. But that was not in accordance with his plans and he led the authorities such a dance (he once stunted very low over the Air Ministry, or rather, the Air Board, as it was then) that they were glad to send him back to France once more, this time as a Flight Commander in a scout squadron.

His machine was a famous Camel and his fearless tactics soon resulted in another decoration—a Bar to his M.C. His squadron was moved to the Italian front and over the Alps the ace soon became the terror of the Austrian pilots. About this time he had an experience which made a lasting impression on him. He shot down an Austrian observation balloon. The two observers leapt for safety with their parachutes and were already half-way to the ground when the blazing wreck of the falling balloon enveloped them in its folds and bore them down in a sheet of flame. The ace was so upset at this ghastly spectacle that he never attacked another balloon. "I do not fight men who cannot fight back," was his terse comment.

His hair-raising exploits did much to raise the drooping morale of the Italians, to the great discomforture of their opponents. He once attacked a group of six huge Gothas, broke up the formation, and sent one down in flames. For this feat he was personally presented with the Italian Silver Medal for Valour by the King of Italy; he was also awarded the D.S.O.

During the early months of 1918 he played havoc with the enemy forces in the air and on the ground. Victory after victory fell to his all-conquering guns. On one occasion he attacked eight enemy fighters and shot two of them down, receiving a second Bar to his M.C. in recognition. He had now

risen to the rank of Major and commanded No. 201 Squadron, equipped with Sopwith Snipes. The Snipe was the latest British single-seater fighter. In October he was badly wounded in a fierce encounter against an overwhelming number of enemy scouts. Wounded in both legs, his thigh and one arm smashed by explosive bullets, he fought on until he had accounted for six of his adversaries. He was only officially credited with four of these, but it brought his total to 52. Fainting from pain and loss of blood he succeeded in guiding his torn machine back to the aerodrome, where he crashed.

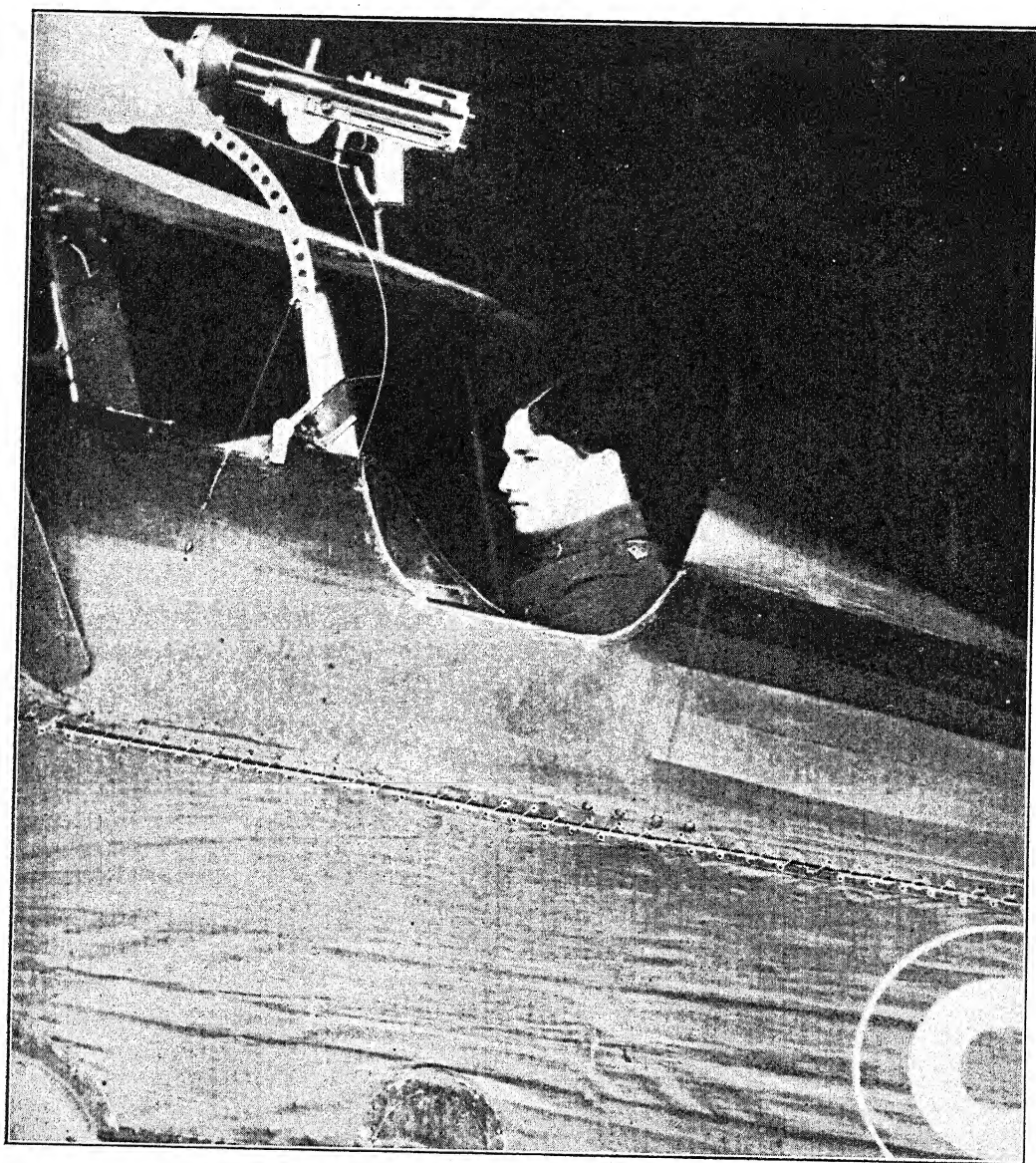
After many weary months in hospital, during which time he endured over twenty operations, he slowly returned to consciousness and life to learn that for his last inspiring combat he had been awarded the highest decoration, the Victoria Cross.

He retired from the R.A.F. with the rank of Major and was later promoted to Colonel in the Royal Canadian Air Force. On March 12, 1930, he was flying a civil aeroplane near Ottawa when his engine failed and he crashed into the ground. The gallant ace had made his last flight.

CAPTAIN ALBERT BALL, V.C., D.S.O., M.C.

Captain Albert Ball will go down in history as the first great English ace. Born at Nottingham in 1896 he enlisted in "Kitchener's Mob" while still a boy, transferred to the R.F.C., set the world talking with his deeds of daring, and received the highest honours a grateful country could bestow before he was killed by Richthofen the Younger in May, 1917—still a boy. For his exploits he received the V.C., D.S.O., M.C., the Legion of Honour, and many other foreign orders.

When war broke out Albert Ball enlisted in the Sherwood Foresters. Burning with eagerness to get to the front he learned to fly at his own expense and, on receiving his Aero



CAPTAIN ALBERT BALL V.C.
British Ace

Imperial War Museum Photo

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Club Certificate, transferred to the R.F.C. He was sent to France almost immediately and at once came under the notice of the authorities by reason of his audacity, skill, and fearless courage. Of him General Trenchard said :—

“He was the most audacious, the most skilful, and the most marvellous pilot in the R.F.C. Every pilot in the Corps considered him a perfect model and strove to imitate him.”

In him we see a true sportsman whose heart and soul were in aviation. All his spare time was spent in the hangars, checking his guns, going over his engine, and every detail of his machine. He flew in all weathers and never refused combat in any circumstances whatsoever, irrespective of the number of his opponents. He ventured far into the enemy sky and once admitted that he had not claimed certain victories because the combats had taken place too far over the lines for confirmation to be obtained. There is not the slightest doubt but that he won many more victories than those for which he was officially credited.

He flew at all hours and at all times and rushed into danger with an impetuosity that carried all before it. He was only happy when in the air and when at last he “failed to return” he had shot down 43 enemy planes and one balloon—all within a year.

In February, 1916, he crossed the Channel to France and joined No. 13 Squadron. Things were going badly with the Allies. The Fokker menace was making things desperately uncomfortable for the British pilots who were flying B.E.'s, machines of inferior performance. He soon passed on to Bristol Scouts and things began to happen. There was little technique in his methods; he just flung himself into the fray and trusted to his superior skill in shooting to see him through. On one occasion he flew over Richthofen's aerodrome and dropped a message asking the Baron to meet him in single combat. The German ace did not accept.

On his nineteenth birthday he had five planes and one

balloon to his credit. He went home on leave and returned as a Flight Commander to No. 11 Squadron, who were flying Nieuport scouts. He went from strength to strength and by September, 1916, he had 28 victories in his log-book. At that time he was the British ace of aces, Guynemer, the French ace, alone had a higher score.

He was posted to No. 60 Squadron, and in February, 1917, the victor of 32 combats returned to England to be decorated by the King at Buckingham Palace. Incidentally, he was the first officer ever to receive the D.S.O. with two Bars. He returned to France to command the celebrated No. 56 Squadron. On his way he made a detour into the enemy sky and shot down two German machines.

His name was, of course, well known to the enemy and many traps were set for him, but without effect. On one occasion he was attacked by no less than twenty Albatros scouts, and his position was desperate. He made no attempt to escape, but stayed and fought them all until his ammunition was finished. In this dog-fight he shot down three of the enemy, which raised his total to 42—two more than Guynemer's at that date.

The end came suddenly when he was at the height of his fame. On May 7 he took off on what was to be his last patrol. Exactly what happened on that tragic sortie will always remain a mystery. He never returned. Days of anxious waiting passed, and then Wolff's Agency made the following announcement. "Lieut. Lothar von Richthofen has brought down a triplane piloted by Captain Ball, his twentieth victory." His death was confirmed, but no one knows how or where he fell. He was buried in the German war cemetery at Anneoulin near La Bassée. No proof was ever produced that he had fallen under the guns of the famous German ace, and there were many who believed, and still believe, that the victory was credited to Richthofen in order to lend lustre to the names of those famous brothers.

OTHER BRITISH ACES

The foregoing are the best known of the British aces, but there were, of course, many others and the numbers of their victories are shown on the list at the end of this chapter. The name of Captain J. L. Trollope will always be remembered for his amazing achievement of shooting down six enemy machines in one day, and the fact that they were all members of the notorious Richthofen circus makes the feat all the more praiseworthy. Later, Captain W. G. Claxton and Captain René Fonck, the French ace, also shot down six machines in one day. It would appear that Captain Trollope's adventure came about in this way. He was on patrol with a formation when he saw four enemy planes attacking a British reconnaissance machine. He attacked, took the enemy by surprise, and shot one down. A few minutes later he saw two enemy two-seaters below him, gave chase, and shot them down within a minute. He climbed back up to his formation, which was engaged in another dog-fight far above. Running through all his ammunition he returned to the aerodrome for a fresh supply and returned to the battle. He encountered three enemy planes and in the ensuing combat shot one of them down. The others endeavoured to escape, but he caught one of them and shot it down in flames—his fifth victory that day. Captain Trollope might now well have rested on his laurels, but on his way home he saw a British two-seater being attacked by an enemy scout. He plunged down upon the scout and sent it hurtling down out of control. All six victories were officially confirmed. Captain Trollope fell when his score stood at 18.

Captain Andrew McKeever's record of 30 victories was remarkable in that they were obtained while flying two-seaters, at first an F.E. and, later, a Bristol Fighter. A Canadian by birth he was only eighteen when war broke out, but he at once enlisted and came to England with the Canadian Expeditionary

Force. He transferred to the R.F.C. in December, 1916, and soon qualified as a pilot. On one occasion he shot down three machines in one day, and on another, with his gunner, L. F. Powell, accounted for six enemy machines out of a formation of eight.

Captain McKeever scored his first victory on June 20, 1917, and his second victory on the following day. Within five months he had shot down and destroyed 29 enemy aeroplanes. His gunner, Powell, shot down 8. Twice McKeever scored the hat trick, shooting down three in one day on September 28 and November 30, 1917.

By that curious twist of fate which seemed to dog so many of the few aces who survived the War, Captain McKeever was to meet his death in a civil accident. He was killed in a skidding motor car on Christmas day, 1919. His record was never equalled by a two-seater pilot of any nation.

When Colonel Bishop was posted home to England and Major "Jimmy" McCudden was accidentally killed, the leading British ace in France was Captain Philip Fullard of No. 1 Squadron. His score amounted to 53 and would, no doubt, have risen still higher but for an unfortunate accident, which, in December, 1917, sent him off to hospital. His name stands sixth on the list of British aces. He went to France in April, 1917, when he was only twenty years of age, yet he created the amazing record of destroying 48 enemy planes in nine months. On one occasion, with a companion, between them they shot down seven enemy planes before breakfast. This almost makes air combat appear easy; it was anything but that. His shooting must have been nearly miraculous. On one occasion his goggles were shot off his face by a German bullet and his machine caught fire, yet he managed to get it down safely his own side of the lines. In the May following his arrival at the front he went off one morning and shot down four German planes. The following morning he shot down three more! He modestly claimed that his success was due

to the foolish tactics employed by his adversaries. Naturally, his exploits did not go unrewarded; he received the D.S.O., M.C. and A.F.C. On December 18, 1917, he shot down his forty-eighth enemy aeroplane. The same afternoon his leg was broken at football on his own aerodrome, which sent him back to hospital in England. Major Fullard is still serving with the Royal Air Force.

BRITISH ACES WITH TWENTY OR MORE CONFIRMED VICTORIES

Major Edward Mannock ¹	73	Captain Kinhead	30
Colonel William Bishop	72	Captain Henry G. Lunchford ¹	29
Major Raymond Collishaw	68	Captain Brunwin-Hales ¹	30
Captain James McCudden ¹	58	Captain Gurden	27
Captain Donald McLaren ¹	54	Captain James A. Slater	26
Major Philip F. Fullard	53	Captain John Leacraft	25
Major William G. Barker	52	Captain John Andrews	24
Captain A. W. B. Proctor	52	Captain Shields	24
Captain Robert A. Little ¹	47	Captain Francis McCubbin ¹	23
Captain G. E. H. McElroy	46	Captain Harry Burden	22
Captain Albert Ball ¹	43	Lieutenant William M. Thompson	22
Captain Larkin	41	Captain A. J. Cooper	22
Captain James Ira T. Jones	40	Captain K. C. Patrick	22
Major Roderic Dallas ¹	39	Captain D. Latimer ¹	22
Captain John Gilmore	37	Captain E. R. Tempest	22
Captain W. G. Claxton ¹	37	Lieutenant C. J. Venter ¹	22
Captain Henry W. Wollett	35	Captain P. J. Clayson	21
Captain Frank G. Quigley	34	Captain A. H. Cobby	21
Captain Frank R. McCall	34	Captain G. E. Thompson ¹	21
Major Albert D. Carter	31	Captain Cecil King	20
Captain J. L. M. White	31	Captain F. C. Falkenburg	20
Captain W. L. Jordan	31	Captain Whistler	20
Captain Hazel	31	Captain Harrison	20
Captain M. B. Frew	30	Major Gilbert W. Green	20
Captain Cedric E. Howell	30	Lieutenant John J. Malone	20
Major Andrew E. McKeever ¹	30	Major A. M. Wilkenson	20

¹Killed.

CHAPTER VIII

THE FRENCH ACES

CAPTAIN RENÉ PAUL FONCK

Captain René Fonck was born at Saulcy-sur-Meurthe on March 27, 1894. His career had been planned as an engineer when he fell under the spell of aviation, and he was flying when war broke out. He was called up as a conscript and posted to the Flying Training School at Dijon. He got his brevet in April, 1915, and was sent to Escadrille C. (Caudron) 47, a reconnaissance and photographic squadron. He quickly made a name for himself as a daring and successful pilot and was mentioned in despatches on more than one occasion. While engaged on these duties he was once shot down by machine-gun fire from the ground, but managed to land behind his own lines.

For seven months he flew over the lines daily and learned all there was to know about war flying and handling a two-seater in difficult circumstances. In August, 1916, he was attacked by two Rumplers, and by sheer brilliant flying forced one of them down intact behind our lines. For this he was awarded the Military Medal. His Escadrille proceeded to the Somme for the great offensive, and Fonck soon came under the notice of the British authorities. On March 17, 1917, he was attacked by a squadron of scouts; he shot one down in flames and out-maneuvred the others.

At this time Fonck was still flying two-seaters, but as a result of this victory he was sent to a scout squadron, which, for a long while, had been the height of his ambition. He made

his first appearance as a scout pilot in Escadrille N. (Nieuport) 103. He was then twenty-three years of age and had risen in rank from private soldier to Chief Adjutant. On May 5, 1917, he shot down a German scout after a thrilling combat over the British lines and for this he was awarded the British Military Medal. On May 11, he shot down another machine in flames, and on the 13th, another, and from now on his score mounted with startling rapidity.

He accepted combat anywhere, at all times, regardless of numbers, and few pilots could hold out long against him. His name became well known and he was made a Chevalier of the Legion of Honour. Before many weeks had passed he was accepted as the best scout pilot in the French army. On September 15 he shot down Wissemann, the German pilot who had been credited with shooting down Guynemer, Fonck's friend and brother ace. In October the weather conditions were bad and Fonck's log-book only shows 13½ hours flying for the month, but in that time he shot down ten enemy planes. His score had now risen to 19, and he was awarded a commission as Lieutenant.

Events now showed him to be one of the most brilliant duellists in the air. On the morning of May 8, 1918, Fonck shot down three enemy planes, having fired only twenty-six bullets, and the same afternoon he destroyed three more with an expenditure of only thirty shots. This gives us some idea of the state of perfection his ability as a pilot and his shooting had reached. Perhaps his greatest exploit occurred on September 26, when in two hours he shot down six German machines, a feat which had only been done once before, by Captain Trollope, R.F.C. When he returned to his aerodrome an examination of his machine-gun belt revealed the amazing fact that he had only used fifty-six bullets.

Fonck was an artist in the air. His method was not the one so often employed by aces—that of rushing head-on at an adversary regardless of the enemy's fire. He never had

what he considered to be a narrow escape! It is on record that he shot down 32 enemy machines in single combat without a single enemy bullet touching his machine anywhere, and from that we may gather some idea of his complete mastery of the tactics of air combat. Many aces would fly straight into a stream of bullets without the slightest hesitation trusting to superior shooting to get their man first. Guynemer, for example, was wounded several times—he was shot down eight times—and Nungesser was wounded seventeen times. Fonck never so much as received a scratch. He won his successes by sheer coolness, caution, and an ability to judge the right moment to strike.

He left the Escadrille 103 in March, 1918, and joined the famous Escadrille Cigognes (the Storks)—officially Escadrille N.3, the French ace of aces squadron which included amongst its pilots such men as Dorme, who scored 23 victories, Pinsard (27), Heurteaux (21), Duellin (21), Chaput (16), and De la Tour (9).

Fonck's advice regarding the qualities necessary for air fighting were perfect fitness, confidence and abstinence. All organs should be functioning perfectly and abuses must be avoided. He never flew himself except when he felt absolutely fit. He considered that it was as necessary to train for air combat as for any athletic contest.

CAPTAIN GEORGES GUYNEMER

Georges Guynemer, a delicate young man of twenty-two, seemed to fly for a long time under the protection of a particularly lucky star. He was shot down eight times and on many occasions returned with his machine riddled with holes from bullets which must have missed him by mere inches. He painted red circles round the bullet holes and his machine soon carried more red paint than the original buff. He estab-



CAPTAIN GEORGES GUYNEMER
French Ace

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lished several clear records. On two occasions he shot down an enemy plane with a single bullet and once brought down four machines in one day, although this latter feat was surpassed by several other aces later on.

He became the idol of the French who followed his exploits with national enthusiasm. On September 11, 1917, he disappeared into the enemy sky. He "failed to return" and no clue as to how he met his death has ever been discovered—or perhaps it would be better to say, disclosed.

When he first tried to enlist in the army he was rejected on account of his poor physique and it was only with great difficulty that he ultimately managed to get into the French Flying Corps. It is an astounding fact that many of the men who afterwards became famous as air fighters were first rejected by the authorities for some real or imagined disability. Further, there seem to be very few instances of aces showing any promise or ability during their training days. Some were even backward pupils.

Guynemer scored his first victory in July, 1915, while flying a heavy bomber and it would seem that this achievement enabled him to secure a transfer to the Escadrille Cigognes, which was then being equipped with Nieuports, the best fighting machine in the world at that time. Guynemer, now a corporal, began his career as an ace in earnest. In September he had one of his most miraculous escapes. He accepted combat with a large formation of enemy planes from over the lines. His engine was put out of action and he began to glide down towards the trenches. Unable to manoeuvre he ran the gauntlet of machine-gun fire from the hostile aircraft. Lower and lower he dropped until he was gliding over the enemy support trenches in a sea of fire and hurtling metal. Every gun was turned on him and the infantry poured a murderous rifle fire at him. But the French infantry had seen the tattered and torn Cigogne coming, and as Guynemer crashed in a shell-hole in no-man's-land they poured blindly over the

parapets regardless of the enemy's fire and carried the ace to safety.

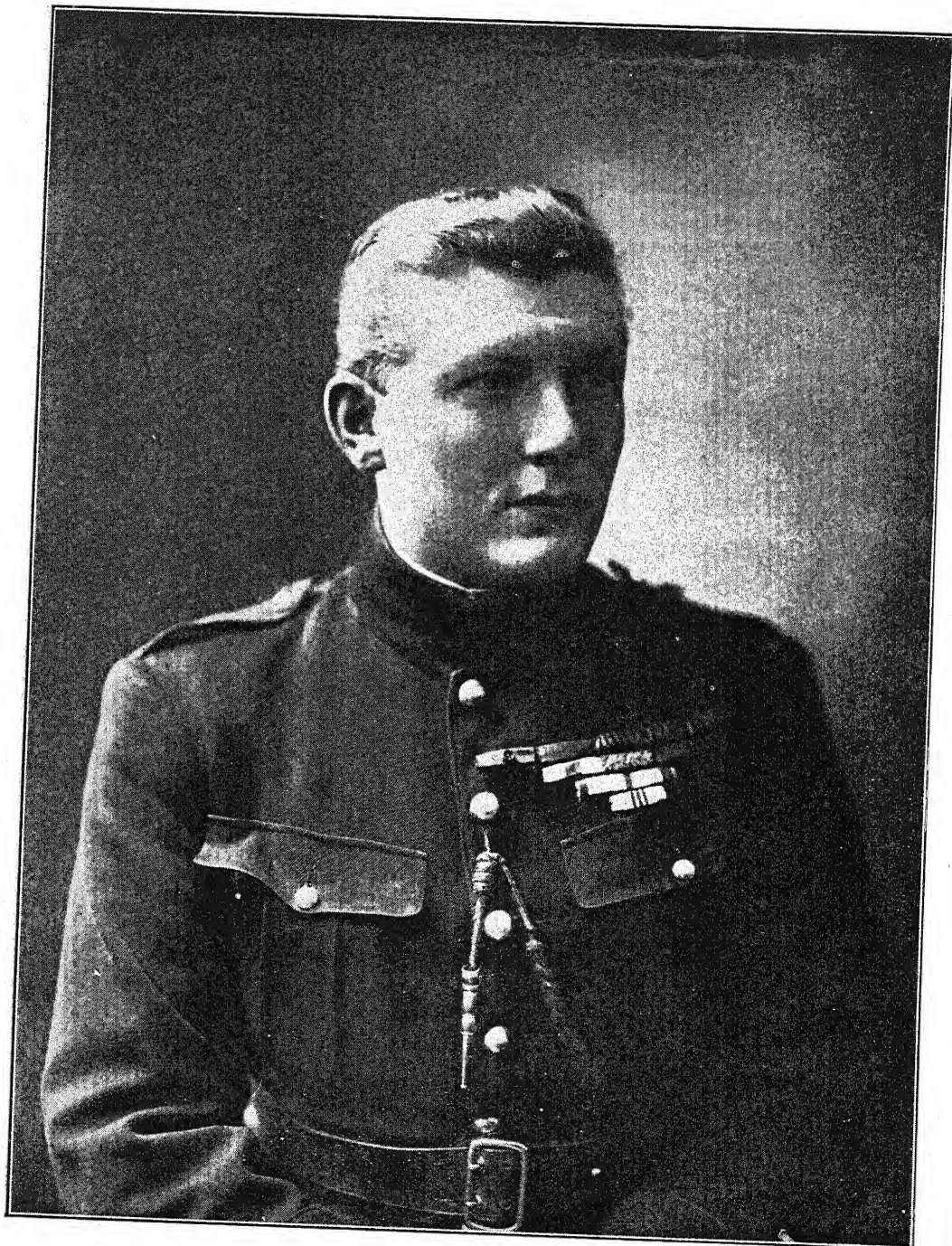
While the battle of Verdun raged Guynemer secured victory after victory in the Spad he was then flying, on the side of which was painted in large white letters, "*Vieux Charles*" (Old Charles). After he had shot down 19 machines with Old Charles it was taken to Paris and exhibited to the hero-worshipping French public, who showed their appreciation by decorating it with thousands of bouquets of flowers.

During the battle of the Somme, while flying at 10,000 feet, his wing was smashed by an anti-aircraft shell. The Spad started falling out of control. The ace sat in the cockpit unable to do anything but await the inevitable end. The machine crashed and buried its nose deep into the mud. When the horrified troops arrived to carry away his corpse they found Guynemer standing calmly surveying the wreck. At that time he had 29 victories to his credit.

In July he took the air in a 200 h.p. Hispano-Suiza Spad fitted with a gun of his own design. This was a light one-pounder gun which fired a shell through a hollow crank-shaft; the shell came out of the propeller boss. He met an Albatros and fired his new gun at it from a distance of two hundred yards, and the black-crossed machine blew up in flames.

On August 20, 1917, Guynemer obtained his 53rd and last victory. The authorities asked him to take a rest, but he refused. "They would think I have stopped flying because I have received all the decorations France can give me," was the reason he gave. He was obviously a sick man and, although he still flew, he was unable to secure a victory; luck seemed to have deserted him and he became morose and irritable.

It rather looks as if his nerve was beginning to suffer; he was certainly in no condition to fly, much less to fight. On September 11, 1917, he took off for a patrol. He never



LIEUT. CHARLES NUNGESSER
French Ace

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returned. The mystery surrounding his disappearance is a baffling one. It was the German custom to publish at once the names of any airmen who fell within their lines, and in the case of such a famous name as Guynemer one would have imagined that the enemy would have been only too anxious to let the world know of the triumph of their own airmen. Ten days passed and there was still no news of Guynemer. A few days later information drifted in from Intelligence sources that an unknown German pilot named Wissemann had written and told his mother that he had shot down Guynemer, the French ace of aces. The French brought pressure to bear through the Swiss Red Cross for the recovery of his body and Germany stated that the ace had been buried at Poelcappelle. A few days later Poelcappelle fell into British hands, but no sign of the grave could be found. In reply to further inquiries Germany then stated that the British artillery had obliterated all trace of Guynemer's machine and his body. This is very hard to believe, but despite exhaustive inquiries no more satisfactory explanation was ever given. Georges Guynemer lies in an unknown grave.

LIEUTENANT CHARLES NUNGESSER

Charles Nungesser entered the War in the French cavalry, and before ten days had passed he had won the Military Medal for capturing single-handed a German staff car filled with officers. Unable to find sufficient excitement on the ground he transferred to the Flying Corps and after taking part in over fifty bombing raids while serving with a bomber squadron, he secured his transfer to a scout squadron, Escadrille N.65, and forthwith commenced his great career as a fighting ace.

His progress was interrupted by an amazing succession of accidents and wounds, any one of which might have enabled him to retire from the contest with honour had he so desired. He was so badly damaged that the authorities pressed him to

take his discharge, but he refused to do so. He hobbled about the aerodrome with the aid of a stick, a sort of free-lance pilot flying when and where he felt inclined. He was wounded seventeen times and there was hardly a bone in his body which was not broken at some time or another ; but for the fact that he spent so much time in hospital he might have won the title of Ace of Aces of France.

He scored his first victory in April, 1915, by shooting down an observation balloon. He had wasted little time for he had only arrived at the aerodrome on the previous day. He carried on the good work by shooting down two enemy aeroplanes in the next two successive days. By June he had won 8 official victories, and by September, 17. At the close of the War he had a total of 45 enemy planes and balloons officially confirmed. As in the case of so many aces who survived the War, he lost his life in an aeroplane accident afterwards, and the story of how he and his friend Coli disappeared on an attempt to fly the Atlantic is still fresh in public memory. The name of Nungesser stands third of the French list of aces.

LIEUTENANT GEORGES MADON

Fourth on the list is the name of Lieut. Georges Madon, and the details of all his exploits would fill an entire volume. He was born at Bizert, finished his school days in Tunis and was at once fired with the desire to fly. He learned to fly on a Bleriot at the famous Étampes School in 1911 and obtained his brevet without a single crash, a remarkable performance in those pioneer days.

When War broke out he was already a finished pilot in the French Flying Corps, but he soon had an experience which nearly put an end to his career. While flying a two-seater he lost his way, force landed, and discovered to his horror that he was in Switzerland. He was, of course, interned, together



LIEUT. GEORGES MADON
French Ace

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with his observer, Chatelain. They escaped, but were recaptured on the Italian-Swiss Frontier and taken back to the internment camp. Later they escaped again by resorting to the desperate measure of gagging and binding their guards. This time they succeeded in reaching France, where they were promptly court-martialled. There was nothing sympathetic in French military discipline in those days. As a punishment for this adventure Madon was awarded sixty days solitary confinement, and his observer—in spite of the fact that he could not help but land where his pilot took him—received sixty days ordinary confinement. This stringent action no doubt discouraged other pilots from losing their way! Madon returned to the front to Escadrille M.F. 218, but he did not remain with this squadron long and his cherished ambition was realized when he was posted to a scout squadron, Escadrille N. 38. Inspired perhaps, with a desire to prove his worth, and, no doubt, rather peeved with his reward (*sic*) for escaping from Switzerland, he attacked all hostile aircraft with such determination and fury that by October, 1917, he had 16 victories officially confirmed. With an utter disregard of consequences he probed far into the enemy sky and he claimed 20 victories for which no possible confirmation could be obtained.

Like all other aces he was a wonderful marksman. On one occasion he attacked, single-handed, seven Albatroses and brought down three of them. Later he attacked another patrol of nine and brought down two. In July, 1917, he had what must have been one of the most miraculous escapes ever recorded. In a dog-fight with a German machine the two planes collided. In the collision nearly all the canvas was stripped off one of his planes and his elevators were smashed. The machine started falling out of control and he was powerless to prevent it. Travelling at terrific speed it crashed into the ground. That a man could escape with his life in such a fearful crash seems nothing short of a miracle, yet such was the case.

He was badly bruised of course, but only a finger was broken. The German plane, minus its tail which had been sheared off in the collision, crashed near him.

Madon was one of the few airmen to force-land behind the German lines and escape capture. One day on patrol over the enemy lines his engine failed and he was obliged to land. He made a swift survey of his engine, corrected the fault, and managed to take off again before the enemy troops could reach him. Another extraordinary adventure, and one which illustrates clearly the point-blank ferocity of his attack, occurred when he was attacking a two-seater at point-blank range. A bullet from his guns shot the German observer's goggles off. They flew up into the air. Madon was so close that they caught in his bracing wires and he returned to his aerodrome with them still in that position.

He seems to have been particularly unlucky in obtaining confirmation of his victories. Even a balloon which he shot down in flames was credited to another airman and he was only able to get the matter adjusted by bringing irrefragable proofs to the authorities. At the close of the War his score stood at 41 officially confirmed victories.

LIEUTENANT RENÉ DORME

Lieutenant René Dorme of the Cigognes was one of the most popular officers in the French Air Service. There seems to have been something particularly lovable about his character which earned him the soubriquet of "Père," and when at last he "failed to return" a spasm of real grief rang through the whole French nation. He was a relentless fighter and even Guynemer described him as one of the best air fighters in France.

He was born in humble circumstances in 1894—his father was station master at Aix-Abancourt, near Verdun—and his education was sadly neglected. At the age of eighteen he enlisted in the army and saw service in Africa with the artillery.



LIEUT. DORME
French Ace

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He returned to France on the outbreak of war and early in 1915 he transferred to the Flying Corps.

He began his flying career like most of the other French aces, in two-seaters, and it was not until April, 1916, that an opportunity presented itself for him to show his mettle. He attacked a formation of six hostile planes and brought one down. As a result of this victory he was invited to transfer to the Cigognes.

It will be noted that it was the French practice to group together pilots who had shown marked ability in air combat, and this, undoubtedly, accounts for the remarkably fine record of one or two particular French squadrons. Nevertheless, the wisdom of this policy is very much in question. One can well imagine the feelings of other squadron commanders when every time they produced a pupil of promise he was whipped away to serve in a squadron already well in the public eye. Such a procedure no doubt spurred new pilots to great efforts if for no other reason than to get into one of the favoured squadrons, but it must have reacted badly on the morale of the personnel of other squadrons. Boelcke, Richthofen, and the leaders of the German circuses were sent new men straight from the flying training schools to replace casualties, and these men had to prove their worth under the critical eyes of experts. When they became proficient they were often taken away to strengthen or command some weaker staffel. Richt-hofen himself often complained bitterly about this, but one can see the wisdom of it from the point of view of the authorities. The morale of a squadron could hardly fail to respond to the honour of having an officer from one of the celebrated circuses to command it.

It was the same with the British squadrons. Pilots were posted from the "pools" to any squadron in need of replacements, the only consideration being the ability of the pilot to fly the type of machine with which the squadron was equipped. Even that was often waived in emergency and

officers not infrequently made their first flights over the lines in types of machines which they had never previously flown. As a matter of detail, this was my own experience. Obviously, this only occurred when circumstances made it unavoidable.

Pere Dorme, now flying a Nieuport scout with the famous Storks, quickly acquired a reputation as an air fighter. Such was his skill as a duellist that his first ten victories were obtained with but two bullet holes through his own machine. No wonder his comrades nick-named him, the Unpuncturable. In September, 1916, he added seven more victories to his score, and by early in 1917 he ranked second only to Guynemer.

On May 25, 1917, the ace took off for the last time. He left the aerodrome with Deullin, an ace who lived to score 20 victories, and together they thrust their way deep into the enemy sky. Deullin saw Pere shoot down an enemy scout and then, attacked by four more of the enemy himself, he lost sight of his companion. After the combat he turned to look for Pere's Spad, but it was nowhere in sight. On the ground far below lay a crumpled machine, blazing furiously, but whether it was friend or foe he could not tell. He waited until his fuel was exhausted and then, sick at heart, he returned home to await the arrival of his friend. But Dorme never returned to the nest of the Cigognes.

Fonck, Guynemer, Nungesser, Madon and Dorme were perhaps the best known of the French knights of the air, but this chapter cannot be closed without mention of such names as Boyau, who fell to eternity when his score stood at 35. Mention must also be made of Coeffard, who fell to his death in the blue skies of France with a splendid record of 34 confirmed victories; of Bourgade, who scored 28, of Armand Pinsard of the Cigognes (27), of Herteaux, also of the Cigognes (21) and Gabriel Guerin who fought his last fight when his bag numbered 23.

FRENCH ACES WITH TWENTY OR MORE CONFIRMED VICTORIES

Captain René Fonck . . .	75	75	Lieutenant Bourgade . . .	28
Captain Georges Guynemer ¹ . . .	53		Captain Pinsard . . .	27
Lieutenant Charles Nungesser . . .	45		Lieutenant Guerin ¹ . . .	23
(Drowned, with his companion Coli in an attempt to fly the Atlantic.)			Lieutenant Dorme ¹ . . .	23
Lieutenant George Madon . . .	41		Lieutenant Haegelin . . .	22
Lieutenant Maurice Boyau ¹ . . .	35		Sergeant Marinovitch . . .	21
Lieutenant Coeffard ¹ . . .	34		Captain Herteaux . . .	21
			Lieutenant Deullin . . .	20

¹ Killed

CHAPTER IX

ACES OF OTHER NATIONS

THE AMERICAN ACES

Mention has already been made of the famous Lafayette Escadrille, the American Squadron which flew under the flag of France from the early days of the War and the members of which incised their names on the Roll of Honour of their own country and on that of France.

On the cessation of hostilities Major Edward Rickenbacker, the victor of 25 battles, was acclaimed America's ace of aces. Well known before the War as a racing motorist, Rickenbacker accompanied General Pershing to France as his official chauffeur, an appointment with which many men would have been well satisfied, but the glamour of flying possessed him and he transferred to the Flying Service.

In March, 1918, he accordingly proceeded to Villeneuve Aerodrome attached to the newly-formed American 94th Squadron with which several Americans who had learnt the business with the French Flying Corps were already serving. Among them was Major Raoul Lufbery, the then leading American ace. In April the squadron moved to Toul, near Verdun, and Rickenbacker really began his flying career. He was at that time twenty-eight years of age.

A fortnight later in company with James Hall he scored his first victory and by the end of May he had shot down five machines and thus qualified for the title of ace according to French and American standards. In June the squadron was moved to Château Thierry to support the American advance then in preparation. Rickenbacker by bad luck fell sick and was forced to spend some time in hospital, which

accounts for the fact that his next victory was not obtained until the middle of September, when he returned to the squadron. During the next fortnight he added another six to his score, and during the month of October he shot down 14 more. The secret of his success appears to have been a combination of confidence and caution; he took few chances and quickly learnt to profit by experience. These qualities were, of course, common amongst the most successful air fighters, particularly so among those who survived the War. A man might fly fearlessly into a hail of bullets time and time again in order to get his man, and escape destruction, but in the end such methods could not fail to bring about disaster.

Major Raoul Lufbery served for a long time with the French Flying Corps before he joined the 94th Squadron on the entry of America into the War. He was killed in combat in May, 1918, at the age of thirty-two and he died in a manner befitting his wonderful career. He had often been heard to say that he would never go down in flames—that if ever his machine took fire he would jump out. He was true to his word and he did just that. When his machine burst into flames the watchers along the line saw a figure stand poised for a moment on the fuselage and then leap into space. Major Lufbery was America's second ace with 17 confirmed victories.

The story of the American aces would not be complete without mention of that remarkable character, Frank Luke, who in September, 1918, set up an amazing record of 21 victories in two weeks, of which 13 were observation balloons. Balloon straffing was a dangerous pastime and "sausages" were usually avoided by most aces. Occasionally, however, a pilot would get what was known as "balloon fever" and then nothing seemed to deter him. They seldom lived long, although there are one or two instances of high scores being gained. The most outstanding specialists in this respect were Captain Coppins, the Belgian ace, who piled up a staggering

score of 26 balloons, and Roth, the German ace, who got 17, on one occasion shooting down five in one day.

Luke's bag is particularly remarkable in that it was obtained in two short weeks, and that this was not overlooked by the authorities was shown by the fact that he was one of the few American airmen to be awarded the American Medal of Honour.

Luke, a fair-haired youth of twenty, arrived at No. 27 Squadron at the end of July. His character was unlike that of any other ace for apparently he was inclined to be boastful and undisciplined, qualities which must have made him unpopular with his comrades. After his third flight over the lines he claimed a victory. He was unable to confirm it, however, and he himself afterwards admitted that the claim was false. We may be sure that this surprising act did not improve his reputation in his squadron, but before judging him harshly for this unpardonable breach of rules let us follow his career a little further. One thing is quite certain; he did not understand the meaning of the word fear. Indeed, he seemed to go out of his way to court danger. His next act was to create a sensation by shooting down two balloons within a space of seven minutes. He shot down a balloon a day for the next three successive days, and then did the hat trick by shooting down three in one day.

On Sunday, September 29, he flew low over the American Balloon Headquarters and dropped a message telling them to watch three enemy balloons which could be seen swinging in the breeze over the German side of the line. The officers took up their positions in an observation post. Three sheets of flame leapt upwards and the balloons were no more. Full of enthusiasm they awaited the return of the champion balloon straffer, but he never returned.

AMERICAN ACES WITH MORE THAN TWENTY VICTORIES

Captain Edward Rickenbacker . 26 Lieutenant Frank Luke . . . 21



MAJOR RAOUL LUFBERY
American Ace

THE ITALIAN ACES

It is not generally known that Italy produced many splendid air fighters during the War, and considering her keen interest from the earliest days of aviation and her brilliant engineering feats, this was only to be expected. Nevertheless, it may come as a surprise to many to know that over forty Italian officers and N.C.O.'s qualified for the title of ace. The chief of these were Major Baracca, who scored 34 victories, before he was killed on June 18, 1918, Lieut. Scaroni, 26, and Major Piccio, 24.

MAJOR FRANCESCO BARACCA

Major Francesco Baracca, called Francesco the Great by his countrymen, the Italian ace of aces, was a good deal older than his contemporary knights of the air. Born in 1883, he was over thirty years of age when war broke out, an age which is considered by the authorities to be too old for air fighting. That the authorities are not always right is clearly demonstrated by the fact that Major Baracca led over seventy raids against the enemy, made over one thousand flights over hostile country, and shot down 36 enemy planes. He won every military honour of Italy and was finally killed in circumstances as romantic and thrilling as his wonderful career.

When war broke out he had already served for eleven years in the Italian cavalry. He transferred, however, to the Air Service, and, as may well be imagined, there was some difficulty about this on account of his age, but Baracca was of the type who got what he wanted.

Like René Fonck, the French ace of aces, he soon made a name for himself as an artillery spotter and reconnaissance expert. Not satisfied with the thrills he got out of ordinary flying he made a practice of attacking enemy forces on the ground on every possible occasion. This was chiefly on the

Austrian front, and his activities became so notorious that the enemy made every possible effort to check them. They also put a price on his head. The Austrian and German pilots on the Italian front who sought to enrich themselves at Baracca's expense never lived long enough to regret their rashness.

Major Baracca's first victory was a double one, the only instance of its kind I believe on record. Far over the lines he was attacked by three Albatroses. Contrary to their not unnatural expectations he did not seek to escape, but turned and attacked them with such fury that two went down in flames and the third, no doubt mentally apologizing for his mistake, made for home as quickly as possible. After this first double victory Baracca became a sort of terror along the line, playing havoc with all and sundry. He scattered ground troops with his guns, bombed their transport and took on fighters, two-seaters and balloons with the same impartiality and disregard for consequences. At this period he was flying a Bristol Fighter, and for a time he carried a gunner, but when one of his gunners, for whom he had a deep affection, was killed he apparently decided that it was hardly fair to expect anybody to fly with him, for afterwards he flew alone. He flew the Bristol Fighter single-handed and carried extra ammunition and bombs as ballast.

Early in 1918, however, he flew an Ansaldo S.V.A. single-seater scout, a type which was nicknamed the "Balilla," fitted with a 220 h.p. S.P.A. engine (Societa Piemontese Automobil) which had a speed of 145 m.p.h.—one of the fastest machines produced in the War. The Escadrille Baracca now became to Italy what the Lafayette and Cigognes Escadrilles were to France.

On June 22, 1918, when he had 34 confirmed victories to his credit, Baracca was seen to fall in flames behind the Austrian lines. He had just flown 250 miles on a special mission to Munich and the enemy were resolved to get him.



MAJOR BARACCA
Italian Ace

Edward Oldham

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When he was last seen the air between him and the Italian frontier was swarming with enemy fighters. The Italian Eagle was trapped, and he must have known it. The fighters closed in on him, and, within sight of home, the gallant officer turned to meet them. The artillery observers along the line watched his last fight against overwhelming odds with bated breath.

He was seen to pick out the leader of an attacking formation and the Albatros plunged to eternity in flames. A second spun down out of control, but in the end they got him, as they were almost bound to do. Witnesses thought they saw him climb out and stand poised for a moment on the edge of his cockpit and then leap into the blue vault below, as did Lufbery, the American ace, when his machine was in flames.

Shortly afterwards the ground on which the ace fell was captured by the Italians and Major Baracca's body was found near the burnt remains of his machine. There was a bullet wound in his head which started the rumour that he had taken his own life; he had been heard to say that he would never allow himself to be taken prisoner, but from the fact that his machine was seen to be falling in flames there is really very little doubt but that he was killed by an enemy bullet.

Major Baracca will always rank as one of the greatest air fighters of the War, and be remembered as Italy's ace of aces for his score was equalled by no other Italian. Quite recently a statue was erected to his memory in Italy.

Lieutenant Silvio Scaroni entered the Italian Flying Corps soon after Italy came into the War. For two years he served in bomber and reconnaissance squadrons and he performed his duties with such zeal that he was able to effect a transfer to a scout squadron. Perhaps his finest exploit occurred in December, 1917, when he shot down three enemy planes in one of the greatest air battles that ever took place over Italy. His aerodrome was raided by a formation of no less than twenty-five enemy bombers. He instantly took off and gave

them combat and, in the ensuing dog-fight, he and other members of his squadron shot down eight of them, three falling to the guns of the ace. Lieut. Scaroni was the leading Italian ace at the end of the War.

ITALIAN ACES WITH MORE THAN TWENTY VICTORIES

Major Francesco Baracca	. 34	Lieutenant Flavio Baracchini	. 21
Lieutenant Silvio Scaroni	. 26	Captain Fulco di Calabria	
Lieut.-Col. Pier Ruggero Piccio	24	Ruffo	20

THE BELGIAN ACES

It is not generally known that Belgium, in spite of her totally inadequate Air Force and inferior equipment in the early days of the War, produced a fair number of aces. Eight airmen were officially credited with five or more victories. The names of Lieut. Thieffry, Capt. Coppens and Lieut. de Meulemeester, stand at the head of the list and it seems to be an open question as to who was most deserving of the title ace of aces of Belgium.

Captain Coppens scored 34 victories, although no less than 26 of these were observation balloons. "Drachens" were counted as victories by the French and Americans, but they were not allowed to be included in the scores of the British aces. It is difficult to see just why this should be, because balloon straffing was an extremely dangerous pursuit; many air fighters who would accept combat in any circumstances with other aeroplanes hesitated to venture within range of the guns and small arms which invariably bristled on the ground around a "sausage."

There were, however, one or two pirates who specialized on them, but few survived for long. Once a pilot was smitten with balloon fever the disease soon became chronic, particu-



LIEUTENANT THIEFFRY
Belgian Ace

Edward Oldham

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larly if his early efforts were successful, but he seldom lived long enough to pile up an appreciable score. The great exceptions were, as previously mentioned, Luke, the American who shot down 26 in a fortnight before he went West, Coppens, and Roth, the German stylist who took to balloon hunting because (as he himself admitted) he couldn't hit anything smaller. Coppens got seven of his balloons in one week, which was very good going.

Thieffry started the war as a motor cyclist despatch rider. During the desperate days of 1915 he was taken prisoner, but escaped and made his way into Holland, where he was, of course, interned. After getting out of Germany his next escape from Holland to Belgium was probably fairly simple by comparison. He was soon back at his unit, but not finding enough excitement he transferred to the Flying Corps where he achieved some success as a bomber pilot. As a result of this, in December, 1916, he managed to transfer to a scout squadron and flying a Nieuport lost no time in making his presence felt.

He scored his first victory in March, 1917, and his second on the 23rd of the same month. He shot down another machine on May 12, and a month later he put number 4 on his score-board. In July, while out on patrol, he was attacked by a large formation of enemy scouts and put up a very good show by shooting down two of them in as many minutes and then succeeded in reaching his own lines safely. On February 23, 1918, when he was the leading Belgian ace with 10 victories, officially credited to him, he was seen to fall in flames behind the German lines.

Lieut. de Meulemeester took up the lance and in two months had equalled Thieffry's score. Then Coppens, an unknown pilot, suddenly leapt into the limelight with a swift score of 10 balloons and 3 enemy planes. By August his score had reached 21, and by September his 30th victory was noted in the Squadron game book.

OTHER ACES WITH THE ALLIES

Very few airmen among the other nations who were fighting on the side of the Allies distinguished themselves during the War. Russia with her vast resources and the tremendous sums of money she spent on aeroplanes both before and during the early days of the War might have been expected to produce a fair number of knights of the air, but she was able to name only three airmen who had qualified for the title. These were, Captain Kosakoff, who put up a very creditable performance by scoring 17 victories, although little is known about them. Captain Kroutenn and Lieut. Pachthenko scored 6 and 5 respectively.

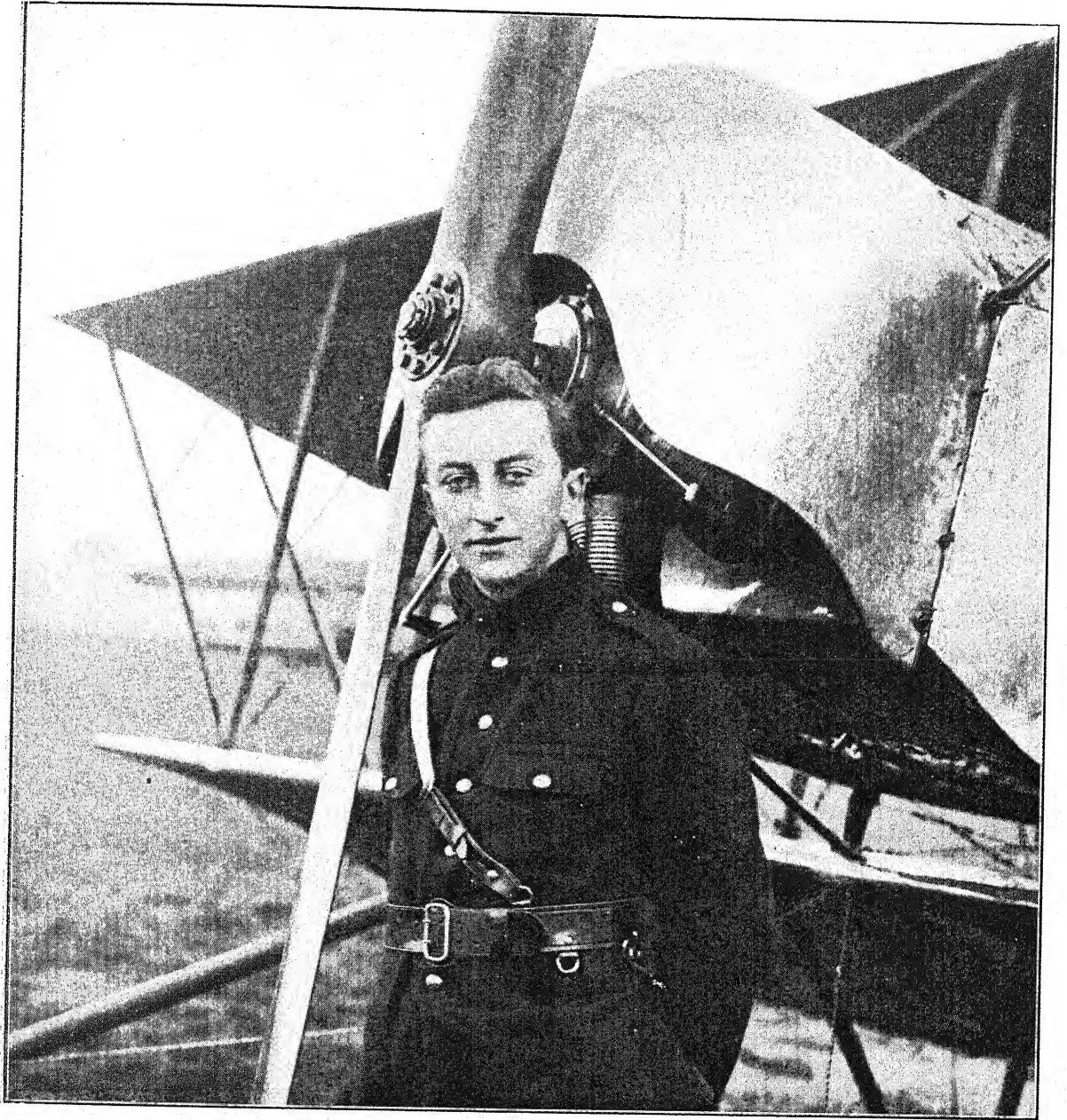
Lieutenant Suk of Roumania appears to be the sole representative ace of that nation, but the German invasion of Roumania and the short period that unfortunate country was able to take an active part in the War probably accounts for this. Lieut. Suk scored 7 victories.

THE GERMAN ACES

BARON MANFRED VON RICHTHOFEN

Baron Manfred von Richthofen was one of the most romantic figures of the Great War; perhaps more stories have been woven about him than any other individual, and his exploits and those of his famous circus have become legendary. Before the War he was a typical Prussian officer of the Uhlans, whose regimental cap he wore until his death. It would seem that he was not a very good cavalry officer and after seeing service on the Russian front he transferred to the Imperial Flying Corps.

He was not an apt pupil and it is difficult to reconcile his early attempts to fly with the masterly ability that came to him later. It must have dumbfounded his instructors. He



CAPTAIN COPPENS, M.C., Knight of Leopold I, Croix de Guerre
Belgian Ace

was vain, but always fair, proud of his prowess, but a relentless and rather inhuman killer—a very different type from Boelcke from whom he had learned much of the art of air duelling.

In April, 1917, he shot down 30 machines in thirty days; altogether he scored 80 confirmed victories, all British machines. Towards the end of his career he did not dog-fight with his circus, but sat above it and picked off stragglers; it would seem that he was doing this when he was killed. Most of his victims were machines of the two-seater type, but this was not unusual for the records of most aces are a story of the superiority of the single-seater fighter over the slower and less manœuvrable bomber or reconnaissance machine.

In March, 1917, Richthofen was shot down by an unknown British pilot, but he managed to land behind the German lines. His narrowest escape appears to have occurred in July of the same year when in a duel with Captain A. E. Woodbridge of No. 20 Squadron (killed after the War in the air mail disaster at Jask) a bullet grazed his skull and put him in hospital for three weeks. Most of his flying was done in an Albatros, but later he used the Fokker Triplane, and it was in a machine of this type that he was killed by Captain Roy Brown of Toronto on April 21, 1918. It may surprise some people to know that Richthofen once admitted that he had never looped the loop in his life. He never indulged in unnecessary aerobatics, and the great secret of his success was probably an outstanding ability to hit what he shot at with his guns.

In his reports Richthofen frequently refers to the west wind which was "fortunately" blowing, and this leaves us in no doubt but that he preferred to fight behind his own lines. In a dog-fight, machines lost height rapidly and tended to drift with the wind, so the reason for his partiality becomes apparent. It was an obvious disadvantage for a damaged machine to have to fight its way home against a head wind, and it made confirmation of a victory more certain. His

anxiety to confirm his victories rather makes it look as though Richthofen was quite as much concerned in his own glorification as with the success of the German cause. He made a collection of silver mugs on each of which he had inscribed the number of the victory and the date, which is rather suggestive of primitive head-hunting.

His circus was very rarely seen over the British side of the line, and apparently it never had to act as an escort to photographic, artillery or bombing machines, which was one of the chief duties of the British scout squadrons. It was far more a weapon of defence than offence, waiting as a rule for British machines to cross the lines before attacking them.

Richthofen's own victories comprised 30 single-seaters and 50 reconnaissance or artillery spotting machines—mostly the slower B.E.'s and R.E.8's, and a few Sopwith 1½ Strutters and Bristol Fighters. He admits that he concentrated his attention upon two-seaters, but whether this was because they were easier meat than fighters or because he considered they were doing more harm than the single-seaters is a matter for conjecture, but it seems as though the increase of his own score was the first thing in his mind.

His usual method of attack was the orthodox one of getting under the tail of a two-seater, or above a fighter, and holding his fire until very close. He called his brother Lothar, who scored 40 victories, a "butcher" because he recklessly attacked any machine in sight, and when Lothar was rather badly wounded (his hip was smashed by a bullet) he as good as told him that it was his own fault.

Lothar was credited with having killed Captain Ball, V.C., but it is doubtful if this claim could stand a close investigation; there was a general feeling at the time that this was done to stir the German nation to enthusiasm. Lothar was in hospital when his brother was killed. Most of the British officers who survived encounters with the Baron bore witness to his flying skill, accurate shooting and fearlessness.

OBERLEUTNANT MAX FRANZ IMMELMANN

Max Immelmann was the first real ace of the War, an ace even before the term was coined. An officer in the German Imperial Flying Corps when war broke out, he lost no time in making his name known to his enemies. Early in the critical days of September, 1914, a German Taube aeroplane appeared over Paris and bombs fell in the streets. With the bombs appeared a brief note addressed to the people of Paris and it was published in the French newspapers the following morning.

"People of Paris! Surrender! The Germans are at your gates. To-morrow you will be ours."

LEUT. IMMELMANN.

Air Scout.

Immelmann continued his raids for some days and then no more was heard of him for many months. His name next appeared in the newspapers on October 2, 1915, when a communiqué was issued by the German authorities that Lieut. Immelmann had shot down a British aeroplane, this making his fourth victory.

In view of subsequent events the notice is now of intense interest. It was the first of its kind that had ever been published in the history of the world and even then no one dreamed of the future of air fighting, the art that air duelling would soon become, or that within the next two years the feat would fade into insignificance beside the huge scores that would be amassed by future pilots.

It might almost be said that Immelmann was the creator of air fighting. He was certainly the first man to introduce anything like a definite method or tactics into air combat. His discovery and use of the famous turn which still bears his name marked a milestone in military aviation. Before that time, stunting as we know it to-day was unknown. Admittedly

Pegoud had looped the loop, but such exceptional and spectacular manoeuvres were not considered in conjunction with air fighting. Pilots flew for the most part on even keel and made steep turns with some trepidation. Immelmann discovered the Immelmann turn, either by accident or design, and he certainly used it to good purpose.

From such meagre records as are available for inspection it would seem that his character was what might be described as mixed. Egotistical, arrogant and intolerant of those beneath him in social status or military rank, he was a typical aristocrat of the German pre-war military clique. By the same token he was a fine soldier, imperialistic, daring and utterly fearless. In one flight he achieved more for the cause of German arms than all his combats as a knight of the air. It was said to have been Immelmann who, on a reconnaissance flight, discovered and reported the disposition of the British and French forces on the Marne and by sounding the warning to von Kluck enabled him to save his army from annihilation when the Allied armies about-turned on the Marne and delivered their staggering blow in the face of the advancing German hordes.

The production of the Fokker monoplane gave Immelmann his great chance as an air fighter, for its performance was far superior to anything the Allies could put in the air. One after another the Allied planes fell under the guns of this speedier craft, but we cannot deny him credit on account of his equipment. He introduced hitherto undreamed of factors into his combats. He discovered the advantages of surprise attack; he learned the value of diving down out of the sun and of using clouds for cover. He studied the unsuspected "blind spots" in opposing two-seaters and knew the wisdom of holding his fire until he was within effective range.

Honours were showered upon him by the Kaiser. Among these was the coveted Pour le Mérite, and he certainly deserved it. But the British were now equipped with better machines,

F.E.2B's, de Havilland scouts and Martinsydes, and Immelmann's moon began to wane. The names of Ball and McCudden were being whispered in the messes on both sides, and the German ace encountered them more than once with decisive results.

There are several accounts of the death of Immelmann, but the Air Board were satisfied from the evidence that he was shot down by Lieut. McCubbin in an F.E. The official account of the incident is as follows :

" On June 18 one of our F.E. aeroplanes whilst patrolling over Annay at about 9 p.m. attacked three Fokkers. One immediately retired whilst the other two turned towards Lens and proceeded to attack another F.E. which was then approaching from that direction. The first-mentioned F.E. (pilot, Lieut. McC.; observer, Corporal W.) followed and joined in the fray, and, diving steeply on one of the attacking Fokkers caused it to plunge perpendicularly into the ground. It was seen to fall to earth by one of our anti-aircraft batteries. A subsequent report from another machine in the neighbourhood states that the Fokker went to pieces in the air and both wings broke off. Extracts from the German newspapers relating to the death of Lieut. Immelmann make it clear that the pilot received his death as outlined above."

Immelmann was killed when his score stood at 16, a small number perhaps when compared with some later ones, but it was a splendid record for his day.

HAUPTMANN OSWALD BOELCKE

Oswald Boelcke, Germany's second ace, was a friend of Immelmann from whom he must have learned much of the art of air duelling. Within a short time he had not only equalled his master's score, but had passed it, in spite of the

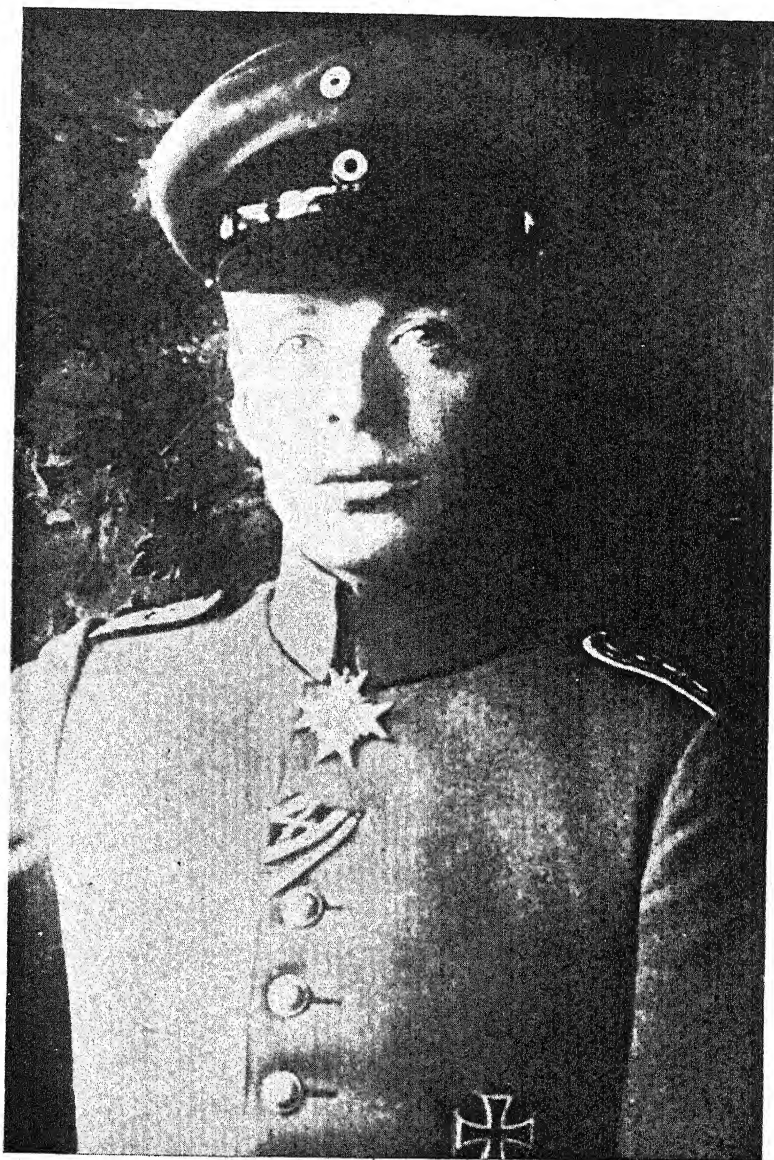
fact that victories were becoming very much more difficult to obtain. The British pilots were now flying Sopwith Pups and were more than holding their own.

Boelcke was a very different type of man to Immelmann, and an examination of his character and actions reveals many fine traits. He was a gentleman in every sense of the word, and a sportsman. He never exhibited that love of killing which was such a marked characteristic in his famous pupil Manfred von Richthofen. Indeed, Boelcke appears to have been a singularly kind-hearted man who killed his enemies with real regret. He much preferred to shoot a machine down under control over his own side of the line and then entertain the pilot in his mess.

The story of his encounter with a derelict machine in the air, with the pilot dead at the controls, was told with bated breath in every Flying Corps mess on the Western Front. It came about this way. One day he attacked a Martinsyde scout and poured in a burst of fire from such a range that the pilot must have been killed instantly. The unlucky "Tinsyde" continued to fly on even keel in wide circles, making no attempt to retaliate or escape. Boelcke studied the machine in amazement. Presently, very cautiously, he flew nearer and the solution was apparent. The pilot was crumpled up in his seat and his last convulsive action must have been to grip the joystick in such a position that the machine remained in steady flight. Boelcke continued his patrol. On the return journey they passed the Martinsyde still circling on its ghostly course and the German leader dipped his wings in salute—an action which speaks more plainly than words.

On another occasion he shot down an F.E. which, spinning, threw its observer out over the German lines and the pilot over the British lines; an amazing and terrible experience.

To Boelcke belongs the honour of grouping the German fighting squadrons into formations which afterwards became known to us as circuses, and which proved to be as formidable



OSWALD BOELCKE
German Ace

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in practice as he claimed they would be when he laid his theory before the German Higher Command.

Boelcke fought his last fight on October 28, 1916, when the fame of the Boelcke circus was at its zenith and when his score had mounted to 40 confirmed victories. No Allied airman can boast that he sent him to his doom for he was accidentally killed in a collision with one of his own pupils. It is doubtful if anyone could say exactly what happened; one can well imagine that the pupil who caused the disaster would be in no condition to give a clear account at the time. Boelcke was attacking a British machine, the pilot of which probably owes his life to the intervention of the other German pilot who came into the fight with the laudable, but quite unnecessary object, of helping his leader. Their wings touched and the ace began to fall out of control. The other machine remained intact, but Boelcke's broke up in the air and fell like a stone, carrying its pilot to a swift death.

OBERLEUTNANT ERNST UDET

It is curious to note how some unique feature marks the career of every air warrior. Ernst Udet was second highest German ace with a record of 62 confirmed victories fought from the first day of the War until the last. He was one of the few aces to survive a collision with an opponent. Of the five leading German aces, i.e., Richthofen (80), Udet (62), Lowenhardt (56), Voss (48) and Rumey (45), Udet was the only one to escape the almost inevitable fate of the flying ace.

He owes his life to the fact that he carried a parachute, an instrument which would have saved hundreds of lives had it been in general use. Many pilots, untouched by bullets or shell splinters, jumped to certain death when their machines took fire during combat. A parachute would have saved Lufbery, the American ace.

Ernst Udet was born in Frankfort in April, 1896. Germany has always been the home of gliding, and while he was

still a boy Udet became interested in soaring flight and no doubt learned much that was to prove of great value to him afterwards. When War broke out he hurried to the recruiting office, but was rejected on account of his poor physique. He was eighteen years of age, but his height was only five feet three inches. However, he persisted in his efforts to enlist and ultimately managed to join the colours as a motor cyclist despatch rider.

In the days that followed he must have seen many dog-fights and, in view of his early experiments with gliders, it is not surprising that he transferred to the Imperial Flying Corps. He went to an artillery observation squadron where he flew an Aviatik with such ability that he was able to effect a transfer to a scout squadron. Flying a Fokker single-seater monoplane he shot down a French Caudron, a victory which brought him the Iron Cross. By the end of 1915 he was an experienced air duellist with several victories to his credit. Immelmann was Germany's shining light. Boelcke and one or two others were just qualifying for the title ace, which, according to German standards, demanded ten victories.

In June, 1916, Immelmann went West and Boelcke took his place as the leading German ace. At this time Wintgens had scored 11 of the 18 victories he was to win before he fell in flames. Hohndorf was close behind with 10. He fell in September, 1917, with only two more added. Von Althaus had 8 of the 9 he was to total before he too went the way of the others. In October Boelcke fell with a magnificent record of 40. Max Mulper, who had looked like doing well—he had rapidly piled up a score of 10—also fell. Stephan Kirmaier, who took over the Boelcke circus, fell in November with a score of 11, and Gustav Leffers, who looked like making a name for himself, went in December with a modest score of 9. Udet went on, but difficult days were ahead. He was flying over the Verdun sector, and such names as Guynemer and Nungesser were already becoming known. The Lafayette and Cigognes



LIEUTENANT ESCHWEGE
German Ace

Escadrilles had been equipped with Nieuports and then Spads, and many bitterly fought duels took place.

In 1917, with their improved equipment, the Allies definitely regained the mastery of the skies and it was a terrible year for the German flyers. Among the aces who fell in that fateful year were, Voss (48), Gontermann (39), Wolff (33), Allmenroeder (30), Schaefer (30), Bohme (24), Adam (21), Frankl (19), Baldamus (18), Hess (17), Dossenbach (15), Schneider (15), Nathanael (14), Wendelmutter (14), Hohndorf (12), Manschott (12), von Kendell (11), Pfeifer (11), Theiller (11) and Berr (10). The Allies were indeed levying a terrible toll.

Udet was moved farther north, opposite the British pilots, but he went on scoring slowly. When he had 21 victories to his name, Richthofen, whose circus was being badly cut up, sent for him, with the result that Udet soon found himself a member of that famous pack.

He had a narrow escape one day when the observer in a Bristol fighter, whom he thought was dead, staggered to his feet and shot Udet's triplane to pieces at point-blank range. The black-crossed machine was falling out of control when Udet stepped over the side with his parachute. It saved his life. The Baron fell in April, 1918, and Udet became the leading German ace. The sky was now full of British machines and it is wonderful that he survived.

In September he had another bout with the Grim Reaper, and his escape on that occasion was in the nature of a miracle. He was flying a Fokker D.VII when he was attacked by a Camel. The two machines rushed at each other, guns streaming bullets. Neither would give way. They met with a terrific crash. For some amazing reason, although badly damaged, neither pilot entirely lost control although they crashed on landing.

In September, 1918, Udet returned to the Alsace front to stop the British day bombers who were bombing the Rhine

towns, and here he added his last two victories to his score. When the Armistice was declared he had 62 confirmed victories. He must have been one of the most brilliant air duellists in the War. He is still alive and still flying, and his ability as a pilot was demonstrated in the film, "The White Hell of Pitz Palu," which was on the screen in this country last year. Quite recently, by a curious twist of fate, he was rescued from an awkward predicament by a Royal Air Force officer while flying for the films in Africa. He was in England only the other day and gave a very fine stunting display at Heston aerodrome.

Among other German pilots who must be mentioned for their brilliant exploits are Roth, who ended the War with a record of 9 enemy planes and 17 observation balloons to his credit; Lieut. Eschwege who scored 20 victories on the Salonika front where he did much to maintain the morale of the Imperial Flying Corps before he met his death in an attack on an observation balloon. His thrilling career has been well described by "Vigilant" in his book *German War Birds* (John Hamilton). Von Hengl and Sergeant Baur, flying a cumbersome artillery machine, shot down no less than 9 enemy scouts. On one occasion they were attacked by a formation of ten Spads; they shot down three of them and reached their own lines safely.

THE GERMAN ACES WITH TWENTY OR MORE CONFIRMED
VICTORIES

Rittm. Manfred Frhr. von Richt-	Oblt. Fritz Roth	28
hofen ¹	Oblt. Otto Bernert	27
Oblt. Ernst Udet	Vzfw. Otto Fruhner	27
Oblt. Erich Lowenhardt ¹	Leut. Hans Kirchstein ¹	27
Leut. Werner Voss ¹	Leut. Karl Thom	27
Leut. Fritz Rumey ¹	Hpt. Adolf Ritter von Tutscheck ¹	27
Hpt. Rudolf Berthold	Leut. Kurt Westhoff	27
Leut. Paul Bauemer	Oblt. Harald Auffarth	30
Leut. Josef Jacobs	Oblt. Oscar Frhr. von Boenigk .	26
Hpt. Bruno Loerzer	Oblt. Eduard Dostler	26
Hpt. Oswald Boelcke ¹	Leut. Arthur Laumann	26
Leut. Franz Buchner	Leut. O. von Beaulieu-Marconnay ¹	25
Oblt. Frhr. Lothar von Richthofen	Oblt. Robert Greim	25
Leut. Karl Menckhoff	Leut. Georg von Hantelmann .	25
Leut. Heinrich Gontermann ¹	Leut. Max Nather	25
Leut. Karl Bolle	Leut. Fritz Puetter ¹	25
Leut. Max Muller ¹	Leut. Erwin Bohme ¹	24
Leut. Julius Buckler	Leut. Hermann Becker	23
Leut. Gustav Doerr	Leut. Georg Nyer	22
Hpt. Ritter Eduard von Schleich	Oblt. Hermann Goring	22
Leut. Josef Veltjens	Leut. Hans Klein	22
Leut. Otto Koennecke	Leut. Hans Pippart ¹	22
Oblt. Kurt Wolff ¹	Leut. Werner Preuss	22
Leut. Heinrich Bongarth	Vzfw. Karl Schlegel	22
Leut. Hermann Frommherz	Leut. Rud. Windisch	22
Leut. Emil Thuy	Leut. Hans Adam ¹	21
Leut. Paul Billik	Leut. Fritz Friedrichs ¹	21
Leut. Karl Allmenroeder ¹	Leut. Fritz Hohn ¹	21
Leut. Karl Degelow	Vzfw. Friedrich Altemeier	20
Leut. Heinrich Kroll	Oblt. Hans Bethge ¹	20
Leut. Josef Mai	Leut. Rudolf von Eschwege ¹ .	20
Leut. Ulrich Neckel	Leut. Walter Goettsch	20
Leut. Karl Schaefer ¹	Leut. Friedrich Noltenius	20
Leut. Walter von Bulow	Hpt. Wilhelm Reinhardt ¹	20
Leut. Walter Blume		28

Rittm.—Rittmeister.
Vzfw.—Vize-Feldwobel.

Hpt.—Hauptman.
Oblt.—Oberleutnant.

¹Killed.

THE AUSTRIAN ACES

Little is known of the Austrian aces, although a fair number made comparatively large scores. It is recorded that Captain Brunowsky won 34 confirmed victories, and was apparently the Austrian ace of aces. Captain Crawford, Lieut. Arrigi, and Lieut. Fiala scored 27, 26, and 23 respectively, and were next on the list.